sunwater

Response to the QCA's Draft Report

Sunwater Irrigation Price Review 2021–24

4 November 2019

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Executive summary

Sunwater welcomes the opportunity to participate in the Queensland Competition Authority's (QCA) second phase of consultation for its Irrigation Price Review. We have reviewed the QCA's Draft Report, released on 9 September 2019, where the QCA provides its initial recommendations on irrigation prices for Sunwater's bulk water supply schemes and distribution systems for the period 1 July 2020 to 30 June 2024.

Our submission is provided in the context of a collaborative and open process, commencing with our proposal in November last year. We understand the QCA has received more than 100 submissions, as well as other feedback as a result of holding 15 workshops across the state. Our consultation with the QCA has also been ongoing since lodging our submission. Behind the scenes, Sunwater has responded to more than 130 requests for additional information, either from the QCA or its consultant on a range of issues. We also responded to requests for information from our customers, customer advocacy groups and other stakeholders, as well as directly engaging with those stakeholders.

In June 2019, we provided the QCA and its consultant updated financial information to reflect proposed changes in cost allocation arrangements which would positively impact the expenditure forecasts for irrigation customers. We note the QCA has accepted many of the changes we made as they reflect lower price outcomes for irrigation customers.

We also note our engagement with customers on a proposed electricity pass-through mechanism and access charge. We have found it difficult to achieve full consensus from all stakeholders on these arrangements, but our proposed approach incorporates input from a number of user groups.

Sunwater's approach

For the most part we have either accepted the QCA's draft decision or provided additional information for it to consider prior to making its final decision. Our submission highlights several areas where we believe the QCA should reconsider its approach.

Operating costs: determining the base year

Sunwater is largely a price taker for many of its input costs, notably labour, electricity and insurance. Our opportunities to offset volatility in input costs are focused on productivity of staff through increased engagement and performance focus, energy efficiency both in terms of energy use and negotiation of electricity contracts, proactive initiatives to minimise higher insurance premiums and technology advancements to maximise labour output and reduce power costs.

These initiatives are recognised in the analysis of historic costs and benchmarks to similar firms, demonstrating prudence and efficiency of current costs. The QCA's decision to accept a methodology proposed by its consultant placing the starting point for operating expenditure that is materially below our current costs puts us in a position of under-recovery with little scope to adjust. The nature of our business limits our scope to reduce expenditure beyond current levels without impacting our ability to deliver existing services or strive for efficient outcomes.

We therefore do not agree with the QCA's draft decision to depart from standard regulatory practice and adopt a routine cost forecast methodology which selects different methodologies using a mix of historical averages, future allocations and base year actuals. The result is a level of operating expenditure well below what we forecast is required to provide services to our customers. This is despite all analysis concluding that current rates of routine expenditure are:

- within industry benchmarks identified by the QCA
- relatively consistent with what the QCA previously determined as prudent and efficient
- assumed to be prudent and efficient, as the QCA did not identify where or how Sunwater's routine costs were imprudent or inefficient.

However, we accept arguments put forward by the QCA which led it to reject a base year using the 2018/19 budget, rather than actual financial results. Chapter 3 provides a strong argument of why using a single, recent base year to project future costs is a better solution than the QCA's proposed approach. We have provided the QCA with our 2018/19 financial results to facilitate this adjustment.

In the event the QCA decides to retain its current approach, we have identified areas where the base year calculated by the QCA's consultant (AECOM) is not reflective of our current or future costs. Our submission includes proposed adjustments to reflect these inadequacies.

In the time allowed for consultation, we have not undertaken a thorough assessment of the QCA's or AECOM's operating expenditure or electricity cost modelling, however, the review we have performed to support our response has uncovered a number of material errors. Some are documented in this submission, while others have been relayed to the QCA directly. We request that the QCA address these errors in its final decision.

Renewals expenditure: asset management and planning practices

We have responded to several opportunities raised by AECOM and the QCA in respect of our asset management and planning practices. Some we had already identified and are currently in the process of addressing. Other highlighted opportunities are new and may become drivers of future change within our business. For this reason, we have accepted some of the recommended reductions to renewals expenditure already incurred.

We have argued against the notion that Sunwater needs to invest in establishing multiple decay curves for our asset classes. We do not believe there is a net benefit to our customers in paying to develop and maintain such curves, when cheaper alternatives will deliver the same or better outcomes (see Section 4.3.2).

We note the QCA's draft decision to extend asset lives, leading to some of our forecast renewals projects being deferred to the 2025–53 period or outside of the planning period altogether. This recommendation needs to be considered carefully, particularly in the context of the proposed reductions to operating and maintenance expenditure. Prolonging the lives of current assets may increase operating and maintenance expenditure in the short to medium term, and will put upward pressure on prices in future periods.

We have also identified several errors in the calculation of deductions and project specific adjustments proposed by AECOM. These are outlined in Appendix C and D. We request that the QCA address these errors in its final decision.

Customer engagement and pricing

In respect of pricing, Sunwater largely accepts the QCA's draft recommended prices, subject to our proposed changes to cost inputs.

The QCA expressed concerns over the extent to which Sunwater engaged with customers on pricing issues. Our 2018 submission highlighted the areas where we engaged with customers. Since then, we have also consulted with customers on our proposed access charge and electricity

cost pass-through mechanism. However, we note that government policies regarding irrigation prices in respect of the referral are a matter for the QCA and Queensland Government.

In the QCA information sessions for many service contracts, our customers expressed that they will be unable to afford the QCA's proposed volumetric charges. We note that the QCA will consider this feedback in finalising its report.

We look forward to working with the QCA and customers in respect of this next phase of consultation.

Our positions at a glance

Consistent with our November 2018 submission, at the start of most chapters, we have provided a summary of our response to key matters discussed in the QCA's draft decision. We have used icons in these profiles to provide stakeholders with an 'at a glance' view of our positions. These icons are explained below, with Table 2 providing a summary of our positions.

Table 1: Explanation of icons

Icon	Description
✓	Sunwater supports the QCA's position, has decided not to prosecute further or has noted the QCA's position (without additional comment).
	We expect the QCA will take into account stakeholder submissions when reaching its final decision.
	There is new information available for the QCA to consider prior to making its final decision.
✗	Sunwater does not support the QCA's draft position and has provided alternative approaches and/or evidence to substantiate our position.

Table 2: Our positions at a glance

Risk and the regulatory framework		
Revenue risk	✓	Sunwater accepts the QCA's position that revenue risk is best managed using a two-part tariff structure.
Cost risk		Sunwater anticipates that there may be changes to costs during the next price path period. These could include electricity costs (due to changes in tariffs), low level pumping costs and insurance premiums. These are addressed in the body of our response. Sunwater has proposed an electricity cost estimation methodology and pass-through mechanism to address uncertainty around electricity (due to tariffs and variability in usage) in some service contracts (Barker Barambah, Bowen Broken Rivers, Bundaberg distribution, Burdekin Haughton distribution, Dawson Valley bulk, Eton distribution, Lower Mary River distribution, Mareeba-Dimbulah distribution, Three Moon Creek and Upper Condamine). Sunwater also recommends that the QCA clarify the process and governance for within-period price reviews to provide certainty for both Sunwater and customers.
Operating expenditure		
Forecasting methodology	✗	Sunwater is concerned that the QCA's use of a mix of estimating methodologies for determining prudent and efficient costs departs from standard regulatory practice

		and results in operating cost allowances which are insufficient for Sunwater to ensure ongoing service delivery for customers. The QCA has adopted AECOM's recommendations which allocate non-direct costs from 2017/18 between service contracts (using 2017/18 directly charged labour as the driver), but used the 2019/20 ratio of irrigation, industrial and urban direct labour charged to determine how much non-direct costs should be assigned to each service contract. With 2018/19 financial data now available we propose the QCA adopt a single base year, adjusted with step changes and trends, consistent with the approach adopted by the QCA and other economic regulators in recent reviews. Should the QCA decide to retain its historical average methodology, we have also provided the adjustments that would be necessary for the historical averages adopted by the QCA to reflect the actual costs of operating each service contract in the next price path period.
Base year direct operations and maintenance costs		Historical averages of direct operations and maintenance costs incurred in each scheme over the 2012/13 to 2017/18 period (with adjustments) are not relevant or reflective of what Sunwater will need to spend over the next four years. As 2018/19 financial data is now available, we encourage the QCA to adopt a 2018/19 base year, consistent with standard regulatory practice. Should the QCA retain its historical average approach to base year direct operations and maintenance costs, there are number of cost adjustments that were either not accounted for in the QCA's Draft Report or that were accounted for incorrectly which need to be incorporated in the base year. These include the escalation of historical labour costs to 2018/19 dollars and the estimation or allowance for a number of business activities, including: • fleet costs • rates and land costs • communication in remote location costs • People and Culture costs (including safety, resourcing and change management) • Digital Enterprise Business Solutions program • office rental. In addition, AECOM made recommendations on reductions to Sunwater's renewals program and acknowledged this would place upward pressure on operation and maintenance costs. We note that utilising a historical average direct operations and maintenance cost methodology does not take into account these additional costs and we request the QCA to reconsider this decision.
Base year electricity costs (bulk)		The QCA has applied assumptions put forward by Sunwater for base year, bulk electricity costs. These should be reviewed to ensure they reflect the most recent regulated retail electricity tariffs and government policy.
Base year electricity costs (distribution)		The QCA has used a high average water usage dataset (based on five years of data) to create a low $/ML volumetric charge for electricity costs. To estimate the total variable electricity charges for the base year, the

		QCA has then switched to a low average water usage dataset (based on 20 years of data). We do not consider this to be the correct application of the QCA's chosen methodology, given the correlation between water usage and electricity usage. If applied correctly, the QCA's methodology generally results in higher base year electricity costs for distribution systems than our June 2019 proposal. We recommend the QCA adopt either Sunwater's proposed forecast electricity costs, developed using our base- step-trend methodology, or remove the inconsistency in usage datasets by adopting the lowest estimate between QCA's methodology (constructed correctly, as described above) and Sunwater's proposed amount to forecast electricity costs.
Base year insurance costs	✓	The QCA has largely accepted the prudency and efficiency of Sunwater's insurance costs and have incorporated this into their base year assumptions. Actual 2018/19 insurance costs of $6.6 million were approximately $541,000 lower than estimated in Sunwater's June 2019 update.
Base year non-direct costs	🔍	The QCA adjusted the 2017/18 year to reflect the reallocation of cost centres and apportionments evident in the 2019/20 financial year and beyond. Whether the QCA accepts Sunwater's proposed 2018/19 base year, or retains its historical average approach, a number of adjustments are required to include recurring costs not reflected in 2017/18 costs.
Step changes	🔍	We have provided up-to-date market information for the QCA to incorporate prior to the release of the final decision.
Escalation factors	🔍	The QCA may wish to provide more reasoning behind its change in approach to calculating CPI. Current labour escalators do not adequately reflect actual labour cost increases to date and in the forward plan. The labour escalation for wages should be based on the Sunwater Enterprise Agreement, currently being negotiated under the Queensland Government-approved bargaining framework, for the period 2018–2021, which includes pay increases of 3 per cent per annum and no forced redundancies. We expect general escalation rates will be updated again with updated market information prior to the final decision. Specific escalators for insurance and electricity have been proposed from 2019/20 onwards.
Efficiency factors	🔍	The QCA has adopted Sunwater's ongoing efficiency targets set out in the November 2018 submission. Assuming our revised methodology for base year operating and maintenance expenditure is accepted, we support the efficiency stretch target. However, the QCA should not apply such a target if it maintains its approach in the draft decision to set costs below current levels.
Renewals expenditure		
Asset planning and management	🔍	We have provided the QCA with more context around our forward approach to asset planning in response to highlighted opportunities about our use of a single decay curve and our new approach to options analyses.

Historical renewals expenditure		We have responded with additional information on two projects where the QCA's consultant made adjustments on the basis that the issues with those projects were systemic to the entire historical renewals program. We have also highlighted potential errors in the consultant's calculations and request the QCA to review prior to making its final decision.
Historical non-routine corrective maintenance expenditure		The QCA has accepted the recovery of non-routine corrective maintenance costs via the annuity. Agreement on the 2011 insurance claim for Boondooma Dam and the 2013 insurance claim has now been reached and we expect the QCA to update its final decision to include net costs in the respective annuities.
Historical non-routine operational expenditure	✓	We accept the QCA's draft decision to include non-routine operational expenditure in the annuity and Sunwater's proposed expenditure.
Renewals expenditure in the price path period		We accept the QCA's draft decision. However, Sunwater has identified a potential error in the consultant's calculations and we request the QCA to review prior to making its final decision.
Renewals expenditure beyond the price path period		We note the impact of the consultant's recommendations is to move price impacts to future price periods. As with other areas of the renewals program, we have identified potential errors in the consultant's calculations. As a result of these errors, we believe the global adjustment for systemic issues has been overstated. We request the QCA to review prior to making its final decision.
Proposed Dam Improvement Program capital expenditure	✓	We support the QCA's draft decision to accept the costs put forward by Sunwater.
Rate of return		
WACC	✓	Sunwater accepts the QCA's draft decision in relation to the WACC, including its position that the 10-year risk free rate will be updated in the final report.
Revenue requirement		
Annuity approach	✓	Sunwater accepts the QCA's draft decision to maintain a renewals annuity approach.
Opening annuity balances	✓	We accept the QCA's draft decision.
Planning period	✓	Sunwater supports the QCA's draft decision to apply a 30-year planning period.
Calculating the renewals annuity	✓	Sunwater supports the QCA's draft decision. We note the WACC and inflation rate may change in the final decision.
Calculating the Dam Improvement Program allowance	✓	We accept the QCA's draft decision to adopt a RAB-based approach and note its decision in relation to the return on and of capital and recognition of capital expenditure on an as-commissioned basis.
Working capital allowance	✓	Sunwater supports the QCA's draft decision to apply a working capital allowance of zero.
Revenue offsets		Sunwater has updated our forecast revenue offsets for the most recent available information.
Tax allowance	✓	Sunwater notes the QCA's draft decision to apply a tax allowance of zero.

Forecast entitlement and usage volumes		
Water access entitlements	✓	Sunwater accepts the QCA's draft decision.
Usage volumes	✗	Sunwater supports the application of a 20-year simple average to determine volumetric prices in principle. However, there are several issues with the extended historical dataset used by the QCA. We request the QCA use a 17-year average (covering the period 2002/03 to 2018/19) in its final decision.
Pricing framework issues		
Tariff structure	✓	Sunwater supports the QCA's draft decision to apply a two-part tariff structure.
Distribution losses	🔍	Sunwater accepts the QCA's draft decision in principle, however, we believe the efficient level of distribution losses in the final report should take into consideration 2018/19 distribution loss deliveries and the expiry of the current water plans, which provide the best opportunity for the potential trading of these losses to be formally considered.
Access charge	💬	We look forward to the QCA reviewing our supplementary submission on the access charge (provided 23 July 2019), noting that the proposal was a collaborative effort between Sunwater and key customer representatives. We published a fact sheet in October 2019 outlining our proposal and notified all customers.
Scheme-specific pricing issues – cost allocation factors	✓	Sunwater accepts the QCA's draft decision to apply our proposed cost allocation factors in the Bundaberg, Lower Mary River and Mareeba-Dimbulah schemes.
Scheme-specific pricing issues – other	✗	Sunwater does not agree with the QCA's assertions that we should undertake hydrological assessments to inform pricing arrangements or that we should negotiate discount pricing arrangements with irrigation customers. These are matters for the Queensland Government. In relation to the Giru Benefited Area, Sunwater considers that the hydrologic assessment information provided in the OD Hydrology report provides a more recent and representative analysis of the level of supplementation and natural yield within the GBA and requests the QCA review the level of natural yield to be recognised and applied to the customers in this system when considering final recommendations for irrigation prices for the GBA.
Alternative tariff groups	💬	Sunwater supports the alternative tariff groups proposed by the QCA, subject to support being received from customers in the affected schemes. We note Sunwater will incur one-off administration costs to update the billing system to reflect the alternative tariff groups, which will likely be offset by a reduction in administration costs going forward.
Draft recommended prices		
Fixed and variable costs	🔍	Sunwater appreciates the QCA's efforts to simplify pricing outcomes for customers and accepts the QCA's draft decision with respect to fixed and variable electricity costs. However, Sunwater maintains our position that the majority of our costs are fixed and consequently the allocation of 20% of direct operations and maintenance costs to the variable component is not reflective of the

		fixed nature of our costs. We request the QCA review this position.
Allocating costs between medium and high priority users	✓	Sunwater accepts the QCA's draft decision on the allocation of costs between medium and high priority users, including our updated Headworks Utilisation Factors.
Cost-reflective and QCA-recommended prices	✓	We note the QCA's draft recommended prices. We also note that in years when water usage is less than the historical average, volumetric prices that include a component of fixed costs and that are set below the cost-reflective level, are likely to affect the adequacy of Sunwater's revenue.
Miscellaneous charges		
Termination fees	🔍	Sunwater requests that the QCA review its draft decision on termination fees in light of the *Water Charge Amendment Rules 2019.*
Drainage charges	✓	Sunwater notes the QCA's draft decision to increase current drainage charges in the Burdekin Haughton distribution system by inflation each year and to recover drainage costs in the Mareeba-Dimbulah distribution system in the Part C charges.
Drainage diversion charges	✓	Sunwater notes the QCA's draft decision to increase current drainage diversion charges by inflation each year.
Water harvesting charges	✓	Sunwater notes the QCA's draft decision that water harvesting charges should comprise any applicable DNRME water harvesting charges, the Part D charge the QCA recommends and a Sunwater lease fee if relevant.

1. Introduction

The Queensland Government has directed the Queensland Competition Authority (QCA) to recommend irrigation prices for Sunwater's bulk water supply schemes and distribution systems. The QCA released its Draft Report on 9 September 2019, and has asked for submissions by 4 November 2019. We welcome the opportunity to provide additional information that will help the QCA finalise its recommendations to the Queensland Government.

1.1 Draft recommendations

The QCA's Draft Report includes several recommendations, including a number of pricing issues that are, appropriately, matters for the Queensland Government to determine. However, the QCA has also included a formal recommendation regarding customer consultation and numerous informal 'encouragements' and recommendations throughout its report.

Sunwater welcomes this input, however, whether these improvements should be pursued should be a matter for discussion between Sunwater, the Queensland Government and our customers, and, if implemented, should be assessed for their relevance and consistency with best practice throughout the price path, given the changing environment in which Sunwater operates.

A summary of Sunwater's response to the QCA's draft recommendations is provided in Table 3. Sunwater accepts a number of the QCA's draft recommendations, with this submission focusing on those matters with which Sunwater does not agree.

Table 3: Response to QCA draft recommendations

Number	Draft recommendation	Response	Chapter
1	We recommend that short-term revenue risk be addressed through the use of a two-part tariff structure that closely aligns with the businesses' cost structure.	Sunwater supports this recommendation to the Minister.	2
2	We recommend: (a) the use of a within-period price review mechanism where: (i) the water businesses or their customers consider there has been a material change in costs triggered by an unpredictable change in input markets, which they are unable to manage (ii) the water businesses consider there has been a material change in costs triggered by a government impost or an unforeseen event, which they are unable to manage (b) that any affected party should be able to apply for a within-period price review without a predefined review trigger (c) the use of an end-of-period adjustment mechanism in cases where the change in cost is determined not to be material.	Currently drafted, this recommendation provides little certainty for Sunwater or customers—the terms and triggers are not defined, and a clear mechanism or process for a within-period price review has not been identified. We suggest the QCA identify: - the material cost change threshold which would legitimise a within-period price review (as a percentage of either total costs or relative to the QCA's allowance for that specific cost) - governance arrangements, including how subsequent review costs should be allocated. Whatever the QCA's solution, we would prefer to see a more clearly defined mechanism outlined in the QCA's final recommendations, particularly given our and our customers' sensitivities to potential changes in costs during the next price path period. While we have proposed a pass-through mechanism to reduce the risk and uncertainty associated with electricity costs, we believe the risk associated with adverse movements	2

Number	Draft recommendation	Response	Chapter
		in other input costs and regulatory imposts over the price path period (or, from our customers' perspective, advantageous changes) should also be able to be mitigated and reflected in prices paid by customers.	
3	We recommend that only prudent and efficient dam safety upgrade capex that is required to meet dam safety obligations should be included in the dam safety upgrade cost category.	Sunwater supports this recommendation to the Minister.	4
4	We recommend that dam safety upgrade capex: (a) be treated as a normal cost of operation in supplying water services to users (b) be allocated to water users unless there is a clear and justifiable basis for allocating some of the costs to other parties.	Sunwater notes this recommendation and notes that issues of price are matters for the Queensland Government to determine.	N/A
5	We recommend that where a dam provides a formal flood mitigation service: (a) that service should be recognised in the allocation of costs, including dam safety upgrade costs (b) the costs associated with that service should not be apportioned to irrigators and should instead be allocated to the beneficiaries of that service (where possible) or the broader community.	Sunwater notes this recommendation and notes that issues of price are matters for the Queensland Government to determine.	N/A
6	We recommend that while the primary purpose of dam safety upgrades is to reduce the risks of dam failure to tolerable levels (as determined by the relevant dam safety regulators), the informal flood moderation benefits for communities downstream of dams should be acknowledged in the allocation of dam safety upgrade capex.	Sunwater notes this recommendation and notes that issues of price are matters for the Queensland Government to determine.	N/A
7	We propose that, for dams that do not provide a formal flood mitigation service and are within the scope of this pricing review, dam safety upgrade capex should be: (a) allocated using a general allocation ratio, with dam-specific allocation ratios only used where there is sufficient evidence of a material difference between the general allocation and the appropriate allocation for a particular dam (b) the general allocation ratio for dam safety upgrade capex should allocate 80 per cent of the irrigation share of these costs to irrigation water users. The remaining 20 per cent should not be included in the allowable cost base for irrigation pricing purposes.	Sunwater notes this recommendation and notes that issues of price are matters for the Queensland Government to determine.	N/A
8	We recommend that Sunwater should work with its customers and with the Government to move to a RAB-based approach for future price reviews.	Sunwater supports a broader consideration of the extent to which a RAB-based methodology should be adopted for future price reviews. These considerations should involve customers, but are not matters that can be investigated without broader government	6

Number	Draft recommendation	Response	Chapter
		policy, economic rigour or a regulatory reform agenda. To this end, Sunwater and customers could invest substantially in a process that does not meet the appetite of the Queensland Government or the QCA. We recommend that any review include broad terms of reference and include input and consideration from the QCA.	
9	We recommend that the tariff structure should include: - a volumetric price that covers variable costs associated with the delivery of water services - a fixed price that reflects the balance of the revenue requirement allocated to the particular tariff group.	Sunwater appreciates the QCA's efforts to simplify pricing outcomes for customers and accepts the QCA's draft decision with respect to fixed and variable electricity costs. However, Sunwater maintains our position that the majority of our costs are fixed and consequently the allocation of 20% of direct operations and maintenance costs to the variable component is not reflective of the fixed nature of our costs. We request the QCA review this position.	8 & 9
10	We recommend that: - prudent and efficient bulk costs associated with necessary distribution loss WAEs be recovered from distribution system customers - the bulk holding (fixed) costs of distribution loss WAEs not required to service distribution system customers be borne by Sunwater - Sunwater should review its distribution loss WAEs and develop a strategy for their future treatment before the next price review.	Sunwater accepts the QCA's draft decision in principle, however, we believe the efficient level of distribution losses in the final report should take into consideration 2018/19 distribution loss deliveries and the expiry of the current water plans, which provide the best opportunity for the potential trading of these losses to be formally considered.	8
11	We recommend that: - dam safety upgrade capex and Inspector-General Emergency Management (IGEM) review costs should be allocated to medium and high priority customers using headworks utilisation factors (HUFs) for bulk WSSs, and using nominal WAEs for distribution systems - insurance costs should be allocated to medium and high priority customers using HUFs for bulk WSSs and using nominal water access entitlements (WAEs) for distribution systems.	Sunwater notes this recommendation to the Minister, but accepts that the assignment of costs between irrigation customers on lower bound prices and other customers is a matter for the Queensland Government to determine.	9
12	We recommend that prices for irrigation customers for each water supply scheme and distribution system should be set according to the prices set out in Appendix B. This includes pricing options for certain tariff groups.	Sunwater notes this recommendation and notes that issues of price are matters for the Queensland Government to determine.	N/A
13	We recommend that: - termination fees should be calculated as up to 11 times (including GST) the relevant cost reflective distribution fixed (Part C) tariff	Sunwater notes this recommendation and notes that issues of price are matters for the Queensland Government to determine.	10

Number	Draft recommendation	Response	Chapter
	- Sunwater can apply a lower multiple to the relevant cost reflective fixed tariff if it is in its commercial interests to do so - Sunwater should never recover any revenue shortfall from remaining customers upon exit of the scheme by another customer.		
14	We recommend that: - current drainage charges for the Burdekin-Haughton distribution scheme be increased each year by our measure of inflation - drainage costs associated with the Mareeba-Dimbulah distribution system should continue to be recovered from the Part C tariff.	Sunwater notes this recommendation and notes that issues of price are matters for the Queensland Government to determine.	10
15	We recommend that current drainage diversion charges be increased each year by our measure of inflation.	Sunwater notes this recommendation and notes that issues of price are matters for the Queensland Government to determine.	10
16	We recommend that distribution system water harvesting charges should comprise any applicable DNRME water harvesting charges, our recommended Part D charge, and a Sunwater lease fee if relevant.	Sunwater notes this recommendation and notes that issues of price are matters for the Queensland Government to determine.	10
17	We recommend that Sunwater improve its engagement with customers by: - ensuring that customers are engaged on an ongoing basis to provide more focus on what is important to customers over the course of the price path period and to provide a better understanding of customer requirements prior to the next price review - ensuring that its consultation draws a clearer link between proposed expenditure and both prices and service level outcomes for customers - engaging with its customers prior to the next price review to develop a pricing proposal that incorporates its proposed prices for all of its tariff groups with irrigation customers.	Sunwater notes this recommendation. Our customer consultation strategy is developed in consultation with regional staff and customers, to ensure that customers have opportunities to be informed by and influence those issues which affect the operation and costs of their service contracts. We will continue to review and improve our customer consultation strategy as issues and customer needs evolve over time. An example of this is our provision of a simplified, easy to operate regulatory model, to help customers engage with Sunwater and the QCA throughout the course of this review. As issues affecting tariff groups and price levels—which in most service contracts are subsidised to some extent by the Queensland Government—are not matters for Sunwater nor our customers to determine, we do not anticipate deliberations on price, pricing splits or tariff groups to become an issue on which we engage with customers.	11

2. Risk and the regulatory framework

2.1 Our positions at a glance

Risk and the regulatory framework		
Revenue risk	✓	Sunwater accepts the QCA's position that revenue risk is best managed using a two-part tariff structure.
Cost risk	🔍	Sunwater anticipates that there may be changes to costs during the next price path period. These could include electricity costs (due to changes in tariffs), low level pumping costs and insurance premiums. These are addressed below. Sunwater has proposed an electricity cost estimation methodology and pass-through mechanism to address uncertainty around electricity (due to tariffs and variability in usage) in some service contracts (Barker Barambah, Bowen Broken Rivers, Bundaberg distribution, Burdekin Haughton distribution, Dawson Valley bulk, Eton distribution, Lower Mary River distribution, Mareeba-Dimbulah distribution, Three Moon Creek and Upper Condamine). Sunwater also recommends that the QCA clarify the process and governance for within-period price reviews to provide certainty for both Sunwater and customers.

2.2 Revenue risk

Sunwater accepts the QCA's draft recommendation to manage short-term revenue risk via a two-part tariff structure. However, as detailed in Chapter 9, Sunwater is concerned that allocating 20 per cent of direct operations and maintenance expenditure to variable costs is not reflective of the fixed nature of our underlying cost base and therefore introduces a new revenue risk for Sunwater in the new price path period. Sunwater also has concerns about revenue adequacy due to the proposed reductions to forecast operating and renewals expenditure. These matters are further discussed in Chapters 3 and 4.

2.3 Cost risk

2.3.1 QCA draft decision

The QCA allocated cost risk to Sunwater where costs are controllable. Where costs are uncontrollable (eg input costs, regulatory imposts and unforeseen events), the QCA considered that prudent and efficient changes in costs should be passed on to customers.

The QCA did not consider it appropriate to use a cost pass-through mechanism, such as the one proposed by Sunwater for electricity, to deal with unpredictable and potentially significant changes in costs. It stated that this could increase price volatility, would not allow for cost changes to be assessed for prudency and efficiency, and would not provide customers clear pricing signals on the cost of their water use.

The QCA recommended:

(a) the use of a within-period price review mechanism where:

  (i) the water businesses or their customers consider there has been a material change in costs triggered by an unpredictable change in input markets, which they are unable to manage

  (ii) the water businesses consider there has been a material change in costs triggered by a government impost or an unforeseen event, which they are unable to manage

(b) that any affected party should be able to apply for a within-period price review without a predefined review trigger

(c) the use of an end-of-period adjustment mechanism in cases where the change in cost is determined not to be material.

2.3.2 Sunwater response

As evidenced in the previous price path period, it is difficult for Sunwater and the QCA to accurately forecast all input costs and to foresee all possible events that may affect our ability to provide services to our customers. Sunwater therefore supports a pricing framework that provides a mechanism/s to manage cost risks and unforeseen events.

We note the QCA already undertakes an ex-post review of past non-routine expenditure and, where the QCA does not believe the expenditure is prudent and/or efficient, the QCA makes end-of-period adjustments. If the terms of the referral for future reviews are broadly consistent with the current terms of the referral, Sunwater expects that the QCA will be able to continue making end-of-period adjustments.

Sunwater therefore anticipates the mechanisms proposed by the QCA will primarily be used for changes between forecast and actual operating expenditure, such as electricity and insurance. We note the forecasts set by the QCA in the previous price path period for electricity and insurance were not sufficient to cover actual efficient costs. We chose not to seek an adjustment in the November 2018 submission, following customer feedback on their concerns over price shocks between periods. We have consequently absorbed $26.5 million ($2018/19) of unrecovered electricity and insurance costs over the 2012/13 to 2017/18 period. As explained in Chapter 3, given the size of the QCA's draft reductions to Sunwater's proposed costs, it is unlikely that absorbing costs over and above what the QCA has allowed will continue to be a viable business decision in the 2021–24 price period

We therefore support opportunities to minimise the impact of large-scale cost adjustments between periods. Nevertheless, we have concerns with the current proposal for within-period price adjustments, particularly in relation to the electricity cost pass-through mechanism and flood damage costs, and in the lack of specificity in the QCA's draft recommendation. We discuss these concerns in more detail below. Sunwater has also outlined some additional examples of costs we believe may materially change over the next price path period, to provide transparency to our customers.

Within-period price review mechanism

The QCA's current proposal contains limited detail and does not provide sufficient certainty for either us, or our customers, as to how such a process would practically operate. Sunwater notes that there are numerous examples of similar mechanisms operating effectively in other jurisdictions and we consider the following attributes, among others, should be taken into consideration:

- Review threshold. Specifying the level at which a new or changed cost warrants a within-period review will provide all stakeholders with a clear understanding and peace of mind about when an application for a mid-period review can be lodged. For example, under the National Electricity Rules, the cost pass through provisions refer to material changes in costs which exceed 1 per cent of the annual revenue requirement for the electricity network service provider for that regulatory year.
- Allocation of review costs. In the QCA's Draft Report, it suggested that any affected party can apply for a within-period price review. We consider that some guidance on how the costs of such a review will be allocated is needed. For example, is the cost of a within-period price review borne by customers within the affected service contract or by all customers?
- A defined review process. That is, a clearly articulated process with each stage, including opportunities for stakeholder consultation, accompanied by appropriate timeframes is required. This process would also need to consider how the cost risk mechanism would operate in the context of the pricing principles in the referral notice, such as the cap on the increases in fixed charges.

We request that the QCA consider incorporating these attributes in a within-period price review mechanism to provide clarity to both Sunwater and our customers.

Electricity pass-through mechanism

Electricity costs are fundamentally driven by changes in price for all schemes. For distribution schemes, however, costs are also driven by changes in energy volumes. This makes forecasting electricity costs in Sunwater's distribution schemes difficult.

In November 2018, Sunwater proposed a solution which would involve changes to the volumetric charge to mitigate the impact of electricity price and volume changes between years for each scheme. Since lodging our submission, we have worked closely with the Queensland Farmers' Federation (QFF), customers and other stakeholders to further develop our proposal.

We consider that an electricity pass-through mechanism would benefit customers in several service contracts,[1] as it would allow customers to benefit from reductions in electricity prices, improved efficiency and energy policy reform, in the pricing period in which those events occur. Adopting this approach would also minimise the large price movements at the end of the period due to an over or under-recovery of electricity costs.

The electricity cost component included in the Part A/B/C/D charges will reflect the historical average required to recover all costs in each scheme,[2] over a period of five years.[3] Under the proposed arrangements agreed between the parties, the electricity cost component underpinning prices would not use variable electricity escalation factors. Rather, the prices would be based on

[1] Barker Barambah, Bowen Broken Rivers, Bundaberg distribution, Burdekin Haughton distribution, Dawson Valley bulk, Eton distribution, Lower Mary River distribution, Mareeba-Dimbulah distribution, Three Moon Creek and Upper Condamine.
[2] See Appendix A.
[3] Six years if updated with most recent electricity usage.

electricity costs escalating by the Consumer Price Index (CPI) over the period, with adjustments for out-turn differences recovered through higher or lower water charges in the next year:

- In years when Sunwater over-recovers electricity costs (due to either high water usage or lower than expected electricity costs), we will refund customers the over-recovered amount[4] on their fourth quarter (Q4) bill.
- In years when Sunwater under-recovers electricity costs (due to either low water usage or higher than expected electricity costs), we will include a surcharge on customers' Q4 bill to recover the outstanding amounts.[5]

We appreciate that this is a significant change for customers, and that it shares the risk of both unexpected costs and savings with customers in real-time, rather than postponing those to a within-period price review or to the end of the price path period. We have proposed an electricity pass-through, rather than rely on either of these options, because a pass-through discount/surcharge will:

- create a direct link from Sunwater's decisions surrounding electricity usage to our customers' bills. This will improve outcomes for both customers and Sunwater by providing:
  - greater accountability to our customers about how and when we use electricity
  - an incentive for customers and Sunwater to work together to further optimise operations and electricity costs via time-of-use and seasonal time-of-use tariffs, pump station capacity and tariff optimisation.
- improve customers' understanding around how, why and when Sunwater makes decisions around electricity usage and tariffs
- minimise the regulatory cost burden borne by irrigation customers
- introduce greater intergenerational equity into cost-reflective pricing—customers will be paying the actual electricity costs, for the water they have used
- ensure greater transparency and more cost-reflective charges by keeping costs within the financial year.

We have consulted with QFF, Canegrowers, Sunwater's Irrigation Customer Reference Group, the Lower Mary Customer Advisory Board, Irrigator Advisory Committees in Mareeba-Dimbulah and Upper Condamine schemes, and representatives of customer representative groups in Bundaberg distribution and Burdekin Haughton distribution, sharing detailed modelling when requested. We have also released a fact sheet outlining the proposal, which was shared with all irrigation customers.

The feedback we have received has been invaluable in helping us design a workable cost pass-through model that meets the needs of our customers in some service contracts. We appreciate the contribution of customers and stakeholders so far, and look forward to future collaboration.

In most cases, customers' primary concerns and feedback about an electricity cost pass-through mechanism have been about:

- bill uncertainty, capacity to pay and the potential for a large surcharge if Sunwater under-recovers electricity costs

[4] Converted to $/ML, using water usage data for the year of the over-charged amount.
[5] Converted to $/ML, using water usage data for the year of the under-charged amount.

- whether Sunwater manages our pump stations efficiently, uses electricity prudently and optimises our tariff selection.

Sunwater has proposed a number of improvements on how we report our electricity usage and efficiency, and suggested that we could release a pass-through bracket at the beginning of each financial year, anticipating the highest and lowest possible pass-through amounts per ML, based on historical usage and new electricity price changes.

A consumer advocate in the Mareeba-Dimbulah distribution system suggested that capping surcharges to limit customers' risk could provide customers with a safety net, particularly for the first period in which a cost pass-through is applied. We have not consulted more broadly on this suggestion, but we see merit in this proposal, assuming the cap was aligned with business-as-usual electricity escalation rates (rather than the assumed CPI escalation in the currently proposed mechanism).

Sunwater has proposed that aside from any upfront costs associated with new reports or internal systems to allow a cost pass-through to be executed, we will be seeking to administer the discounts/surcharges within our current resources. Similarly, to minimise regulatory costs to our customers, we have proposed that if Sunwater's electricity efficiency or usage falls outside limits determined in consultation with our customers, Sunwater can be requested to investigate and report back to customers on why the inefficiency or excessive usage occurred compared to market expectations. If customers are not satisfied with Sunwater's explanation, the matter could be escalated to the QCA, with subsequent costs borne 50/50 between Sunwater and the relevant service contract(s).

We consider this initiative would have significant benefits for our customers, but acknowledge that customers in some service contracts have indicated that they do not intend to support the introduction of the electricity cost pass-through in the next price path period. On this basis we have not made changes to our proposal to apply market-based escalation factors (combined with step changes for transitional and obsolete regulated retail tariffs) for forecast electricity costs.

Application of end-of-period adjustments to material costs, including flood damage costs

In its draft decision, the QCA indicated that material changes in costs should be dealt with using a within-period review. This is a departure from the current arrangements, which allow end-of-period adjustments for material changes in costs. The QCA's Draft Report does not contain supporting rationale for this change in approach.

Sunwater does not support this approach, particularly for costs related to flood events (an "unforeseen event").

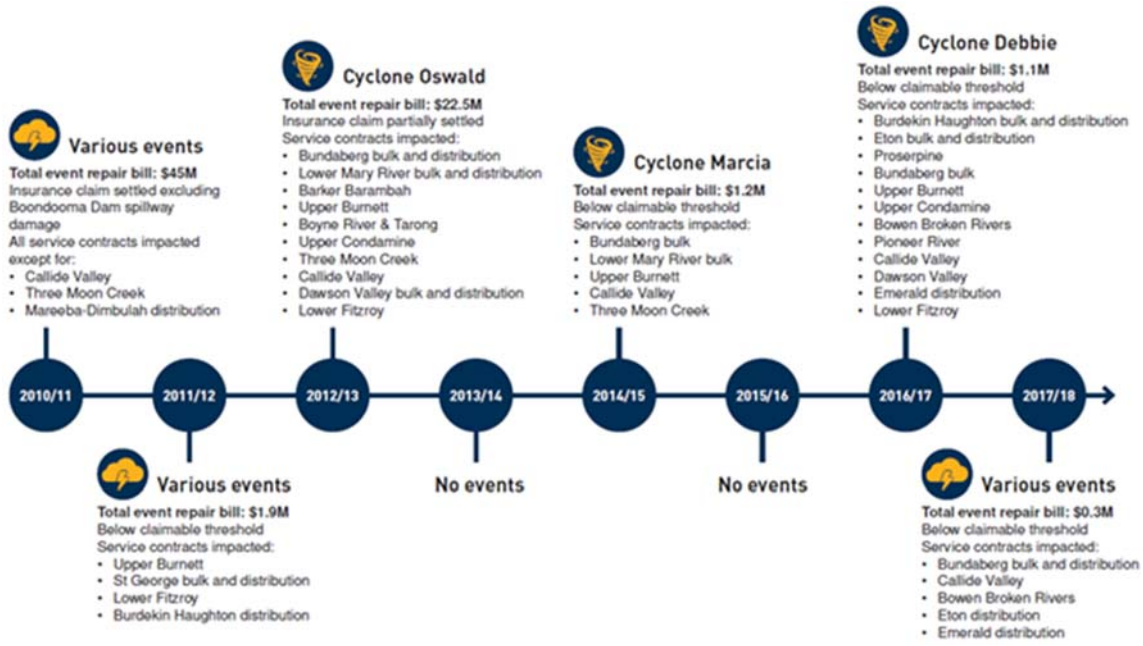
Sunwater currently adds non-routine corrective maintenance and non-routine operations and maintenance costs to the annuity. These costs include expenditure related to flood events, including repairing damage to assets caused by floods and flood operations. For costs incurred over the 2012/13 to 2017/18 period, the QCA undertook an ex-post review of these costs in its Draft Report to assess their prudency and efficiency and made an end-of-period revenue adjustment (see Chapter 3 of Part B).[6]

Sunwater notes that extreme weather events (including floods) are part of our normal operating environment, with all but one of our irrigation schemes being affected by an extreme weather event at one point or another over the 2012/13 to 2017/18 period (see Figure 1). Applying for a within-period review each time an extreme weather event occurs would be administratively burdensome

[6] For those costs which are not subject to an unresolved insurance claim.

for Sunwater and the party assessing the price review application. In addition, it can sometimes take years before Sunwater is able to properly assess damage and estimate repair costs, due to water levels in storages and rivers typically being higher following such events. Further, we note the QCA's preference for projects to be excluded from the renewals allowance where the related insurance claim is not yet resolved. Historically, the insurance claim process has taken several years to resolve, suggesting that applying for a mid-period review may not always be possible.

Figure 1: Timeline of extreme weather events affecting Sunwater infrastructure[1]



1. Includes only those service contracts with irrigation customers (excluding Burnett Water Pty Ltd).

Sunwater therefore recommends a continuation of the 2012 review approach for material changes to costs; specifically, an ability for Sunwater to apply for either a mid-period review or an end-of-period revenue adjustment.

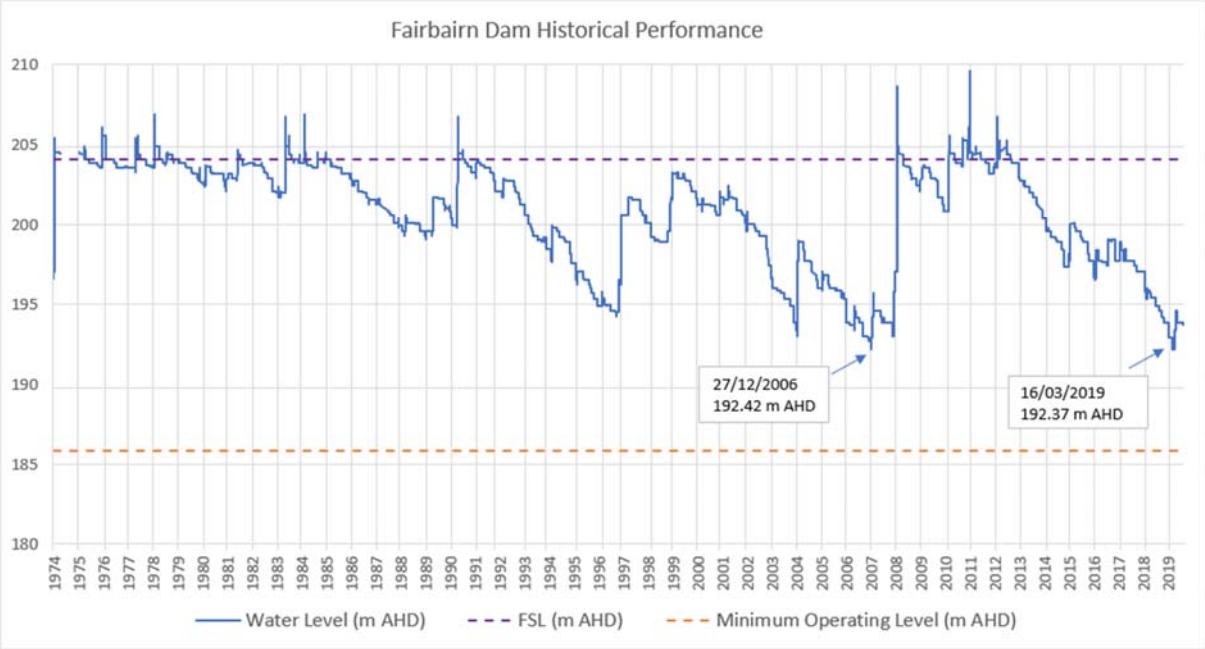
Low level pumping

At Fairbairn Dam, the right bank and left bank outlets are unable to operate as expected when the water level is too low. The inability to supply begins at approximately elevation (EL) 191.65 (9 per cent), however, Sunwater's low level pumping strategy planning commences at EL 193.64 (17 per cent). Pumps are installed at approximately EL 192.47 (12 per cent).

While Sunwater has not had to pump previously, we did come close in December 2006 and March 2019 (as shown in Figure 2).

Leading up to low level pumping situations, customers are kept informed of forecast dates, water levels and strategies. Customers are also requested to provide their expected water demand patterns to better inform our planning. Customer discussions on low level pumping generally occur once the dam level is below 20 per cent, with no imminent inflow predicted. To keep customers informed, Sunwater holds meetings with the Irrigator Advisory Committee and Fairbairn Irrigation Network. We also distribute monthly newsletters to all customers in the scheme.

Figure 2: Fairbairn Dam historical performance[1]



1. FSL = Fully Supply Level. m AHD = elevation in metres with respect to the Australian Height Datum.

In the 2012 review, the QCA assigned the risk of low level pumping to customers, rather than include an estimate of prudent and efficient costs of an uncertain event in prices. During the next price path period, if Sunwater needs to install and operate pumps in the Nogoa Mackenzie bulk water supply scheme so we can continue to supply water to our customers, Sunwater proposes to recover those costs through the annuity as a non-routine operational cost rather than apply for a within-period review.

There are a number of reasons why the annuity is Sunwater's preferred approach to recovering low level pumping costs:

- Although the costs of low level pumping are significant to the Nogoa Mackenzie bulk water supply scheme (approximately $0.2 million for set up and $34/ML for pumping costs), they are specific to this scheme. As a result, Sunwater believes that the costs of a within-period review undertaken solely for low level pumping, relative to the likely quantum of pumping costs, would be a material and inefficient cost burden to customers.
- Including these costs in the annuity smooths the impact on prices over 30 years and removes a potential price shock to customers in a period when they are experiencing severe drought conditions.
- The QCA is still able to review low level pumping costs for prudency and efficiency before allowing them to be passed on to customers at the next price path review.

Changes to legislative and regulatory obligations

On 22 February 2019, the 'Condamine and Balonne' and 'Border Rivers and Moonie' water plans were finalised. A provision in both water plans is that all water allocations are measured, as directed by the chief executive, by 31 December 2022. The Department of Natural Resources, Mines and Energy (DNRME) is currently consulting on proposals to strengthen non-urban water

metering, including the standard of measurement to apply. Until this policy is finalised, Sunwater cannot accurately forecast potential increases in metering costs for the next price path period.

Sunwater will work closely with DNRME as these changes are implemented to determine the nature of any changes to Sunwater's operations. We may seek a mid-period price review or end-of-period adjustment as a result.

3. Operating expenditure

3.1 Our positions at a glance

Operating expenditure		
Forecasting methodology	✗	Sunwater is concerned that the QCA's use of a mix of estimating methodologies for determining prudent and efficient costs departs from standard regulatory practice and results in operating cost allowances which are insufficient for Sunwater to ensure ongoing service delivery for customers. The QCA has adopted AECOM's recommendations which allocate non-direct costs from 2017/18 between service contracts (using 2017/18 directly charged labour as the driver), but used the 2019/20 ratio of irrigation, industrial and urban direct labour charged to determine how much non-direct costs should be assigned to each service contract. With 2018/19 financial data now available we propose the QCA adopt a single base year, adjusted with step changes and trends, consistent with the approach adopted by the QCA and other economic regulators in recent reviews. Should the QCA decide to retain its historical average methodology, we have also provided the adjustments that would be necessary for the historical averages adopted by the QCA to reflect the actual costs of operating each service contract in the next price path period.
Base year direct operations and maintenance costs	✗	Historical averages of direct operations and maintenance costs incurred in each scheme over the 2012/13 to 2017/18 period (with adjustments) are not relevant or reflective of what Sunwater will need to spend over the next four years. As 2018/19 financial data is now available, we encourage the QCA to adopt a 2018/19 base year, consistent with standard regulatory practice. Should the QCA retain its historical average approach to base year direct operations and maintenance costs, there are number of cost adjustments that were either not accounted for in the QCA's Draft Report or that were accounted for incorrectly which need to be incorporated in the base year. These include the escalation of historical labour costs to 2018/19 dollars and the estimation or allowance for a number of business activities, including: • fleet costs • rates and land costs • communication in remote location costs • People and Culture costs (including safety, resourcing and change management) • Digital Enterprise Business Solutions program • office rental. In addition, AECOM made recommendations on reductions to Sunwater's renewals program and acknowledged this would place upward pressure on operation and maintenance costs. We note that utilising a historical average direct operations and maintenance cost methodology does not take into account these additional costs and we request the QCA to reconsider this decision.
Base year electricity costs: bulk	🔍	The QCA has applied assumptions put forward by Sunwater for base year, bulk electricity costs. These should be reviewed

		to ensure they reflect the most recent regulated retail electricity tariffs and government policy.
Base year electricity costs (distribution)	✕	The QCA has used a high average water usage dataset (based on five years of data) to create a low $/ML volumetric charge for electricity costs. To estimate the total variable electricity charges for the base year, the QCA has then switched to a low average water usage dataset (based on 20 years of data). We do not consider this to be the correct application of the QCA's chosen methodology, given the correlation between water usage and electricity usage. If applied correctly, the QCA's methodology generally results in higher base year electricity costs for distribution systems than our June 2019 proposal. We recommend the QCA adopt either Sunwater's proposed forecast electricity costs, developed using our base- step-trend methodology, or remove the inconsistency in usage datasets by adopting the lowest estimate between QCA's methodology (constructed correctly, as described above) and Sunwater's proposed amount to forecast electricity costs.
Base year insurance costs	🔍	The QCA has largely accepted the prudency and efficiency of Sunwater's insurance costs and have incorporated this into their base year assumptions. Actual 2018/19 insurance costs of $6.6 million were approximately $541,000 lower than estimated in Sunwater's June 2019 update.
Base year non-direct costs	🔍	The QCA adjusted the 2017/18 year to reflect the reallocation of cost centres and apportionments evident in the 2019/20 financial year and beyond. Whether the QCA accepts Sunwater's proposed 2018/19 base year, or retains its historical average approach, a number of adjustments are required to include recurring costs not reflected in 2017/18 costs.
Step changes	🔍	We have provided up-to-date market information for the QCA to incorporate prior to the release of the final decision.
Escalation factors	🔍	The QCA may wish to provide more reasoning behind its change in approach to calculating CPI. Current labour escalators do not adequately reflect actual labour cost increases to date and in the forward plan. The labour escalation for wages should be based on the Sunwater Enterprise Agreement, currently being negotiated under the Queensland Government-approved bargaining framework, for the period 2018–2021, which includes pay increases of 3 per cent per annum and no forced redundancies. We expect general escalation rates will be updated again with updated market information prior to the final decision. Specific escalators for insurance and electricity have been proposed from 2019/20 onwards.
Efficiency factors	🔍	The QCA has adopted Sunwater's ongoing efficiency targets set out in the November 2018 submission. Assuming our revised methodology for base year operating and maintenance expenditure is accepted, we support the efficiency stretch target. However, the QCA should not apply such a target if it maintains its approach in the draft decision to set costs below current levels.

3.2 Summary

As a Government Owned Corporation (GOC) and a company operating in a commercial environment, Sunwater is bound by both the *Government Owned Corporations Act 1993* and the *Corporations Act 2001*, which means we must comply with relevant State Government Policy, be commercial and ensure good governance.

Sunwater's three largest costs are labour, electricity and insurance. Sunwater has Service Level Agreements and scheme rules and targets for delivery of our services and is effectively a 'price taker' for labour rates, electricity tariffs, rates and insurance premium rates. Sunwater is focused on being as efficient as it can be, and in doing so manages:

- full-time equivalent (FTE) headcount and productivity of staff through increased engagement and performance focus (in accordance with the Sunwater Enterprise Agreement, currently being negotiated under the Queensland Government-approved bargaining framework, for the period 2018–2021, which includes pay increases of 3 per cent per annum and no forced redundancies)
- power usage in operations, as well as evaluating and negotiating improved outcomes in electricity contracts and alternative ways to reduce power costs
- review of insurance values declared, roadshow presentations with insurers for more informed understanding of business and consideration of self-insurance or not insuring assets
- technology to reduce labour and power costs.[7]

Given the above, Sunwater has limited ability to drive additional efficiency savings above those already targeted, particularly given insurance premiums are expected to continue to increase above inflation after an increase of 5 per cent in 2018/19. Consequently, Sunwater believes it is essential the operating cost allowances in the QCA's recommended prices are based on a robust assessment of efficient costs.

This chapter sets out:

- the background to our November 2018 submission and the steps leading up to the QCA's draft decision (Section 3.3)
- our concerns with the QCA's draft decision to adopt AECOM's alternative forecast methodology. In particular, we note the shortcomings in AECOM's approach to establishing an alternative starting point for forecast operations and maintenance costs (Sections 3.4.4 and 3.5.3) that results in insufficient operating cost allowances to ensure service delivery for the 2021–24 price path period
- a proposed way forward, which addresses the shortcomings in AECOM's methodology and is more consistent with contemporary regulatory practice (Sections 3.4.4 and 3.5.3)
- necessary adjustments which must be made to AECOM's assumptions, if the QCA decides to retain AECOM's alternative methodology (Section 3.5.3). We provide additional information to help the QCA make these adjustments in Appendix B.

We also note several shortcomings in respect of the QCA's base year electricity cost assumptions in Section 3.6.4 and recommend three options to address these. Our response to insurance base year costs is in Section 3.7.4.

[7] Evaluations of potential technological solutions are part of a long-term approach that will require significant investment and assessment prior to any savings being achieved.

Section 3.8.4 provides additional information that the QCA needs to take into account in establishing base year non-direct operating costs. AECOM's analysis took into account future reductions in corporate support costs and future changes to corporate support allocation rates, but failed to properly consider other changes that will form necessary parts of our future cost base.

Finally, we respond to QCA's draft decision on step changes (Section 3.9), escalation rates (Section 3.10) and the continuing efficiency target (Section 3.11).

3.3 Background

In November 2018, Sunwater submitted that we would require $422 million between 2018/19 and 2023/24 to deliver routine operations and maintenance services to our customers in the schemes covered by the QCA's review. We noted that this was above our actual expenditure in the previous period and reflects:

- new ongoing costs associated with the Inspector-General Emergency Management (IGEM) Review recommendations
- higher electricity and insurance costs which began rising during the previous price path period and, in respect of electricity, are expected to increase even further in some schemes due to upcoming changes to transitional and obsolete regulated retail electricity tariffs.

In June 2019, we updated our forecasts in response to questions raised by the QCA and AECOM (the QCA's consultant), as well as concerns from customers regarding non-direct cost allocations and movements between direct and non-direct costs in historical and current years. Our revisions included updates to our Cost Allocation Methodology (CAM), applying from 2020/21 onwards. The QCA's draft decision largely adopted the future allocation methodology as it resulted in lower non-direct costs being allocated to irrigation customers. It also accepted the proposed reductions Sunwater put forward in terms of future corporate support costs. However, it rejected the corresponding increases that were not transfers to other cost centres.

The QCA's draft decision recognises that the historical and current performance and forecast assumptions put forward by Sunwater are efficient in the areas of:

- historical direct and non-direct operating costs
- historical insurance costs and the proposed escalation of insurance at CPI
- procurement of electricity[8]
- escalation factors applied to direct and non-direct costs
- estimates of electricity costs for bulk water supply schemes[9]
- our asset management and risk assessment framework.[10]

Despite largely accepting the prudency and efficiency of Sunwater's costs, the QCA's draft allowance for operating expenditure is 8 per cent lower than proposed in Sunwater's June 2019 update. The biggest changes between Sunwater's forecast and the QCA's draft decision relate to the estimation of an appropriate base year. While the QCA and its consultant found Sunwater's historical costs and forecast assumptions to be prudent and efficient, AECOM's alternative methodology results in an outcome that is 5 per cent lower than our June 2019 base year

[8] AECOM (2019), *Rural Irrigation Operational Expenditure Review – Sunwater (redacted)*, p62.
[9] QCA draft decision, p27.
[10] AECOM (2019), *Rural Irrigation Operational Expenditure Review – Sunwater (redacted)*, p20.

estimates. In our view, this is largely attributable to AECOM's approach to constructing the base year, which uses a variety of different methodologies:

- average direct operations and maintenance costs between 2012/13 and 2017/18
- future cost estimates for non-direct costs
- Sunwater's forecast costs for electricity (bulk water supply schemes) and insurance
- historical electricity usage data (distribution schemes) between 2013/14 and 2017/18, with mixed-year historical water usage averages.

The QCA's acceptance of AECOM's approach results in a forecast that understates our true efficient costs. Our submission responds to the QCA's draft decision to adopt AECOM's approach to estimating a base year, rather than adopt a base-step-trend approach that uses the most recent actual financial results, which is a more common approach to estimating forecast operating costs for regulatory purposes.[11]

AECOM's decision not to use Sunwater's methodology was primarily due to our proposed use of 2018/19 budgeted costs for a base year rather than actual costs. However, 2018/19 financial results are now available. We propose that the QCA adopt 2018/19 actual costs as the base year for determining our forecast operating costs, rather than AECOM's proposed base year assumptions, which mix cost allocations and costs from different years and forecasts. Given that AECOM has undertaken an extremely thorough review of Sunwater business systems and processes and did not identify any systemic operating cost efficiencies, Sunwater considers that adopting 2018/19 actual costs as the base year should not require any additional efficiency reviews.

Generally speaking, Sunwater has found AECOM's methodology difficult to understand and complicated to replicate. Sunwater's assessment reveals that AECOM's approach also fails to take into account current costs, operational requirements and best-practice (from both a regulatory and organisational perspective). Methodological differences aside, Sunwater has identified several errors underpinning AECOM's calculations, which we request the QCA review and address. The sections below outline our specific concerns with the QCA's methodology and our proposed solutions.

As AECOM and the QCA have done, we consider electricity and insurance costs independently from other operating costs. As these are significant costs for both Sunwater and our customers, and largely outside of Sunwater's control, this provides an opportunity for us to explain the changes to those cost items in detail and to outline anticipated changes.

3.4 Forecast methodology

3.4.1 Sunwater forecasts

Sunwater's November 2018 submission included a forecast for operating costs using a base-step-trend forecasting methodology. Last year, KPMG advised the QCA that this methodology is *"…the most common approach to forecasting operating expenditure for regulatory purposes*".[12] The QCA moved to a base-step-trend methodology for Seqwater's bulk water prices based on this advice.[13]

[11] KPMG (2018), *Seqwater expenditure review, prudency and efficiency assessment*, March 2018.
[12] Ibid., p144.
[13] Seqwater departed from a common base-step-trend methodology by using a budget as the base year. The QCA accepted this departure as part of its decision.

The QCA also expressed a preference for Sunwater to adopt an approach consistent with current decisions leading up to the irrigation price review.

A base-step-trend methodology usually comprises the following steps.

- Assessing the most recent audited financial statements for prudency and efficiency, with necessary adjustments to:
  - remove abnormal or non-recurrent expenditure items in the actuals
  - incorporate any other adjustments necessary for an efficient operating expenditure forecast
  - reflect future changes in the business (such as changes to capitalisation or the cost allocation method).
- Rolling forward base year expenditure to the nominated regulatory period, allowing for:
  - step changes in expenditure (positive or negative) reflecting changes in obligations, service delivery or corporate structure
  - escalation due to increases in volume over time[14]
  - escalation of key cost inputs including labour, electricity, insurance and materials
  - efficiency improvements over time.

Consistent with the base-step-trend methodology, Sunwater's November 2018 submission:

- adopted 2018/19 estimates as our base year forecast, with a number of adjustments in order for the base year to be used to forecast costs for 2020/21 to 2023/24:
  - removal of routine recreational facility costs
  - reductions in non-direct costs so they were more representative of expected future costs
- escalated cost categories for the base year to reflect expected movements in input prices over the period
- made specific adjustments to forward electricity costs to reflect likely structural changes in regulated retail electricity tariffs for some schemes
- applied global efficiency adjustments over the price path period.

This information was included in Sunwater's regulatory model, which was made available to the QCA and our customers at the time of our November 2018 submission.

3.4.2 June 2019 updated forecasts

Our November 2018 submission was completed during a period of organisational restructure, and before Sunwater completed an internal review and update of our CAM. In June 2019, we updated our forecasts to reflect minor improvements in the CAM. These updated forecasts also responded to questions raised by the QCA and AECOM, as well as concerns from customers regarding non-direct cost allocation and movements between direct and non-direct costs in historical and current years.

[14] Sunwater proposed no volume escalators in our operating expenditure proposal as customer numbers are relatively constant over time.

The main updates to the June 2019 forecasts included:

- higher levels of direct charging of labour, resulting in reduced local area support costs (and higher direct costs), consistent with normalised levels of operating expenditure expected in the next price path period (while different to the historical average)
- four local area support cost rates, adjusted to be region-specific (the November 2018 submission was an average for the four regions)
- removal of light vehicle costs from local area support costs (light vehicle costs are now directly charged to service contracts)
- revised IGEM costs and drivers for allocation, reflecting the reduction in IGEM costs and the corresponding reduction in the allocation to most service contracts
- revised insurance costs to align with market expectations and the revalued asset base
- removal of costs associated with the Nogoa Mackenzie (Emerald) distribution system, which transitioned to local management arrangements
- revised corporate support costs, local area support costs and indirect costs to reflect changes incorporated into the 2019/20 cost base for these items
- reduced forecast electricity costs for the Burdekin Haughton distribution system following the introduction of a contestable contract for energy supply at one pump station.

Our revisions also included updates to our CAM, applying from 2020/21 onwards. Aside from these specific items, the overall change at the total level was immaterial.

3.4.3 AECOM and QCA assessment

AECOM noted that it was generally satisfied with Sunwater's comprehensive asset management framework and risk assessment framework,[15] and accepted a base-step-trend methodology to determine base year costs for the next price path period.

However, AECOM did not accept Sunwater's proposal to use the 2018/19 budget[16] as a base year. AECOM considered that the 2018/19 budget was inconsistent with a base-step-trend methodology and found the 2018/19 year only included part of the organisational restructuring. AECOM also suggested that the 2018/19 budget appears to include significant one-off costs.[17]

AECOM recommended the QCA adopt an average of direct operations and maintenance for the 2012/13 to 2017/18 period (in $2018/19), with later years adjusted for low levels of direct labour charging.

AECOM's use of this approach was limited to the calculation of the base year for direct operations and maintenance costs. Non-direct costs, electricity and insurance were not forecast using the same methodology. AECOM used different approaches to derive base year values for non-direct, electricity and insurance costs—a mixture of historical averages, forecast costs and Sunwater estimates.

The QCA accepted AECOM's arguments to reject Sunwater's 2018/19 budget as a proxy for establishing base year costs and adopted AECOM's alternative approach to calculating base year costs.[18]

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[15] AECOM (2019), *Rural Irrigation Operational Expenditure Review – Sunwater (redacted)*, p20.
[16] Ibid., p4.
[17] Ibid., p17.
[18] QCA draft decision, p13.

3.4.4 Sunwater response

We strongly believe that a base-step-trend approach is the most appropriate methodology to forecast operating expenditure, consistent with the advice KPMG provided the QCA in 2017. Noting AECOM's preference not to use the 2018/19 budget as an appropriate base year, we propose that the QCA adopt actual 2018/19 costs as the base year instead. This will allow the application of the base-step-trend approach using the most recently available financial results. It also provides the best representation of costs likely to be incurred by Sunwater in the next five years, as 2018/19 actuals reflect the most current operational and business requirements, input markets and regulatory obligations. We strongly believe it is a better measure than any single previous year or an average of historical years.

Our methodology includes adjustments to this base year amount for electricity and non-direct costs, where there are necessary changes to reflect likely future costs. Our approach to step changes and price escalation are similar to those adopted by the QCA in its draft decision.

Our revised methodology addresses the concerns raised by AECOM and the QCA in respect of our previous methodology and is superior to the alternative methodology put forward by AECOM and used by the QCA to support its draft decision.

We outline the shortcomings of the QCA's alternative methodology in the sections below.

3.5 Base year direct operations and maintenance expenditure

3.5.1 Sunwater forecasts

Sunwater used 2018/19 estimates as a starting point for our base year direct operations and maintenance expenditure calculation. While common convention would apply the most recent full financial year actual results as the base year, in our view the adoption of 2017/18 financial outcomes would not have resulted in an appropriate base year. This is because:

- 2017/18 reflected a historical organisation structure and staffing levels, whereas 2018/19 estimates were more likely representative of future arrangements.
- 2017/18 costs included direct and non-direct costs associated with the St George and Dawson Valley distribution schemes.[19] The 2018/19 budget included adjustments to reflect the reduction of direct costs associated with these schemes, as well as further adjustments to non-direct costs.
- 2018/19 was more representative of ongoing non-direct routine costs associated with implementing the recommendations of the IGEM review.

[19] 2017/18 costs also include direct and non-direct costs associated with the Emerald distribution scheme, which subsequently transitioned to LMA in 2019.

3.5.2 AECOM and QCA assessment

Rejection of Sunwater's approach to base year direct operations and maintenance expenditure

As noted above, AECOM rejected Sunwater's use of 2018/19 budget as a base year. AECOM stated that Sunwater's base year was a budget, not actual expenditure, included only part of the organisational restructuring and appeared to include significant one-off costs.[20]

Use of a historical long-term average for direct operations and maintenance expenditure

In the absence of 2018/19 actual costs, AECOM recommended a departure from the common approach of using the most recent financial costs as base year expenditure (insofar as it related to operating and maintenance activity). AECOM justified this departure for the following reasons:

- AECOM was of the view that weather is the primary driver of routine operations and maintenance, and a cost base with event-dependent variability is best addressed by taking a long-term historical average of direct costs.
- While Sunwater's direct operations and maintenance costs were reasonably stable at an aggregate level, there was variation between levels of direct operating expenditure at a scheme level and therefore a scheme-by-scheme average of direct costs (after adjustments) would be a more appropriate basis for future operating expenditure forecasting.

AECOM considered that this event-dependent variability justified the use of an average of adjusted scheme-level direct costs incurred during the 2012/13 to 2017/18 period. AECOM aggregated these averages and recommended that this calculated amount be used as the basis for forecasting future direct operations and maintenance expenditure.[21] The QCA accepted AECOM's assessment that a six-year historical average of costs was a large enough dataset to capture the expected variability in operations over the long term.

Adjustments were made at the scheme level for some of the historical costs which impacted the average cost applied. This includes changes at Boyne River & Tarong and Bundaberg distribution. Adjustments primarily targeted expenditure above the average and resulted in a reduction to the average direct operations and maintenance costs.

Potential for increases in direct operations and maintenance expenditure

While reducing Sunwater's base year expenditure, AECOM made recommendations on Sunwater's renewals program that it acknowledged would place upward pressure on operating costs. It did not, however, make adjustments to reflect this. As outlined in our renewals chapter, AECOM did not accept Sunwater's forecast renewals expenditure, criticising Sunwater's approach to condition-based replacement life and the use of a single decay curve.

AECOM specifically noted that the adoption of its alternative approach, which substantially reduces the renewals expenditure forecast proposed by Sunwater, is also likely to result in higher maintenance costs. This is because late renewal of assets is likely to result in higher rates of asset failure, increasing maintenance costs at the end of life and potentially resulting in breaches of service standard obligations. Importantly, AECOM did not adjust for these costs in in its own forecasts of direct operations and maintenance expenditure.[22]

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[20] AECOM (2019), *Rural Irrigation Operational Expenditure Review – Sunwater (redacted)*, p17.
[21] Ibid., p71.
[22] Ibid., p20.

3.5.3 Sunwater response

AECOM's approach to establishing a base year is inappropriate

Sunwater notes that the QCA accepted Seqwater's use of a budget as a base year for its most recent bulk water decision. Nevertheless, we accept that our decision to submit operating expenditure forecasts using the 2018/19 budget as a base year (as opposed to actual financial results) made it more difficult for AECOM to accept our proposal.

AECOM found it difficult to properly scrutinise the efficiency of the year chosen in comparison to other years. This was exacerbated by a number of issues including adjustments to normalise for past treatments of time sheeting and an under-recovery of non-direct costs in 2017/18. These difficulties reflect the challenging and changing environment that Sunwater currently operates in. The alternative approach recommended by AECOM does not resolve these challenges.

AECOM's arguments to depart from a standard base-step-trend approach are much less salient now that 2018/19 financial results are available. Sunwater considers that the separation of non-direct costs from direct costs and adopting almost opposite methodologies for each category two to estimate the efficient base year for future forecasts does not to result in an outcome that accurately reflects future efficient operating expenditure. This is particularly the case for Sunwater, given the substantial changes in business arrangements in the last few years, and changes in relation to the allocation of costs to direct and non-direct activities.

Using AECOM's approach, the individual scheme costs are often lower than Sunwater's proposed costs and, in some circumstances, represent half of what Sunwater put forward.[23] This is inconsistent with the QCA's pricing principle of revenue adequacy.[24]

Direct costs are considered at aggregate level, not at scheme level

AECOM adopted an assessment at an aggregate level and concluded that Sunwater's costs were generally efficient and prudent, and broadly consistent in real terms across the historical period. However, AECOM then disaggregated costs to a scheme level; assessed the variance between actual costs, proposed costs and the QCA's recommended costs at this level; and concluded that these variances must be event (weather) related. It then adjusted direct base year costs at the scheme level and re-aggregated back to a consolidated view.

In our view, and included in information we presented to AECOM, the level of activity and resource cross-over between service contracts means it is inappropriate to make separate assessments of operating expenditure at a scheme and aggregate level. This approach ignores the scale benefits Sunwater has in allocating resources to activities where required, and will potentially result in funded resource levels being lower than required.

Weather is not a single driver of variability

While year-on-year direct costs may vary at a scheme level and may be impacted by weather, Sunwater's underlying costs do not vary significantly over time. Sunwater does not employ significantly more staff at a scheme level to deal with weather-related events, nor do we release staff at other times. The QCA's proposed two-part tariff structure and allocation of costs to fixed

[23] QCA draft decision, p17.
[24] The QCA's Statement of Regulatory Pricing Principles notes that "…a critical regulatory requirement is that prices charged by regulated firms are sufficient to generate adequate revenues to provide appropriate incentives for investment and efficient operation." (page iv). See https://www.qca.org.au/wp-content/uploads/2019/05/1918_X-QCA-Paper-PricingPaperFinalPosition-0813-1.pdf

and variable components reflect the fact that the majority of Sunwater's costs are fixed. Pricing structures reflect some operating costs having a component that varies reasonably with usage. However, this is only a small proportion of the price.

The QCA's draft decision accepts the fact that any attempt to apportion some component of variable costs involves a degree of subjectivity and judgement.[25] To the extent that any costs are variable, they relate to the effect of usage which is not always directly linked to weather.

Changes in direct operating and maintenance costs are predominantly driven by input costs, operational needs, and regulatory or compliance requirements, which are not strongly correlated to demand for water.

Departure from most common regulatory forecasting approaches

We noted in our November 2018 submission that our methodology was consistent with the precedent the QCA set in the Seqwater bulk water decision. The QCA used a base-step-trend approach to forecast Seqwater's operating expenditure for bulk water prices and continued this approach when establishing forecast operating expenditure for Seqwater's irrigation business. The QCA relied on the advice of its consultant, KPMG, when considering its proposed methodology for bulk water. KPMG noted that base-step-trend approaches are common across most regulators, including the:

- Essential Services Commission of Victoria (as evidenced by its most recent water price review in 2018)
- Australian Energy Regulator (AER) (as evidenced by most electricity decisions over the last five years or so)
- Independent Pricing and Regulatory Tribunal (IPART) (as evidenced by the most recent pricing decision for Hunter Water in 2016)
- Office of the Tasmanian Economic Regulator (as evidenced by the most recent pricing decision for Taswater in 2019).[26]

We note that Seqwater undertakes many similar operations to Sunwater, but the QCA did not adopt a weather-based historical average in Seqwater's circumstance.

Inappropriate normalisation of historical costs

AECOM's methodology attempts to normalise historical costs to a common dollar equivalent by using the out-turn Brisbane All groups July-June data and the Reserve Back of Australia's (RBA) escalation data. However, CPI is only an indicator of movements in the prices of goods and services over time. It cannot be used as an accurate measure of price movements for Sunwater's operating expenditure between years. Wages, contractors and a wide range of materials costs are likely to vary to the CPI assumption used in the AECOM's normalisation.

AECOM's methodology also weights the circumstances, operating environment, and legislative and regulatory obligations of the business equally in 2012/13 as 2017/18. In reality, however, Sunwater has been through extensive changes in our business over this time, such that it would be inappropriate to give costs incurred in July 2012 an equal standing with more recent costs (especially when these costs are used to set an efficient level of forecast operating expenditure almost 10 years later).

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[25] QCA draft decision, p149.
[26] KPMG (2018), *Seqwater expenditure review, prudency and efficiency assessment*, March 2018, p190.

Approach fails to adequately consider changes to organisational structure and time sheeting practices

AECOM itself noted Sunwater's organisational structure has changed several times over the last few years and the cost structure was revised accordingly, transferring costs between categories and between cost pools.[27] AECOM observed that historical variances in direct operations and maintenance expenditure were attributed to changes in time writing practices which were relaxed in 2016. AECOM noted that this change in work practice "*…caused a decrease in direct costs charged and an equivalent increase in 'residual' labour costs recovered via allocation of local overhead*".[28] Half of the years included in the historical average that AECOM has used are affected by the issues with time writing practices, yet AECOM has only adjusted two years of data. Given the weight AECOM gave the issue of time writing throughout its report, it does not seem to be prudent to have incorporated these years in its historical average base year.

Consideration of the QCA's assessment of renewals expenditure on forward operating expenditure requirements

We noted above AECOM's view that the QCA's adoption of its recommendations to extend asset lives is likely to result in higher maintenance costs, which have not been factored into AECOM's assessment of operating expenditure.[29] The QCA accepted AECOM's general recommendations on renewals expenditure but has not addressed AECOM's expectation of upward pressure on maintenance costs associated with its recommendations.

AECOM did not consider the implications of its decisions in relation to renewals expenditure when making recommendations in respect of operating expenditure. We do not believe it is appropriate for AECOM to review renewals and operating expenditure in isolation. Revenue adequacy needs to consider the substitution possibilities between operating expenditure and renewals expenditure. Sunwater notes that AECOM did not quantify the expected increase in operating expenditure, but it was able to quantify the proposed decrease in renewals expenditure. Sunwater requests that if the QCA accepts the proposed reduction to renewals expenditure, it also quantifies the increase in operating expenditure so that it may be captured in the forecast operating expenditure requirements. This is particularly important in the context of such a large reduction in operating costs without any findings of actual inefficiency on the part of Sunwater.

Proposed base year for direct operations and maintenance costs

Consistent with regulatory best practice,[30] Sunwater proposes the use of 2018/19 actuals as the base year for operating costs. This is the most appropriate starting point for assessing future operating expenditure for a number of reasons:

- Actual direct operations and maintenance costs reflect the most recent and relevant operating circumstances, capturing increases and decreases in input and labour costs; shifts in land and property-related costs; regulatory and compliance obligations; and efficiency gains and incremental system improvements.
- Increases in direct operations and maintenance expenditure in both 2017/18 and 2018/19 correspond largely with reductions in non-direct costs with most of these increases attributed to improvements in time-writing of some activities to routine projects.

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[27] AECOM (2019), *Rural Irrigation Operational Expenditure Review – Sunwater (redacted)*, p139.
[28] Ibid., p9.
[29] Ibid., p20
[30] KPMG (2018), *Seqwater expenditure review, prudency and efficiency assessmen*t, March 2018, p144.

- The correlation between the majority of Sunwater costs and weather is weak. The variability identified year-on-year reflects supply and demand of key inputs and operating requirements. While these may be influenced by extraordinary events, for the most part, direct operations and maintenance costs are unaffected.

2018/19 actual operating costs represent a more appropriate basis for the setting of future direct operations and maintenance expenditure than the 2018/19 budget provided in November 2018, the de-escalated budget put forward in our June 2019 update or AECOM's normalised six-year historical average of direct operations and maintenance costs.

Adjustments to the QCA's proposed historical average base year

For the reasons outlined above, we are confident that a base year using Sunwater's most recent audited financial statements represent a more appropriate starting point to forecast future direct operations and maintenance expenditure compared to AECOM's historical average base year.

Should the QCA disagree and opt to retain AECOM's historical average base year, the QCA will need to ensure that AECOM's proposed costs are adjusted for necessary increases in costs between the historical average and the present. There are also errors in the assumptions, escalators and datasets that AECOM has used to calculate its historical average base year. We have summarised these changes in Table 4, with additional detail provided below and in the appendices.

Table 4: Direct costs—required changes to QCA historical base year ($2018/19)

Cost category	Global adjustments	Scheme-specific	Total
Direct labour		522	522
Contractors		124	124
Remote communications[1]		251	251
Materials		206	206
Legal and administration		133	133
Escalation of labour costs in historical average	426		426
Utilisation adjustments for 2016/17 and 2017/18			0
Estimation of fleet costs (Plants, equipment and	398		398
Estimation of travel costs (Travel costs)	42	21	63
Total adjustments to base year[2]	**866**	**1,257**	**2,123**

1. $16,750/year at storages in Mareeba-Dimbulah, Burdekin Haughton, Bundaberg, Proserpine, Bowen Broken Rivers, Eton, Callide Valley, Nogoa Mackenzie, Three Moon Creek, Upper Burnett, Upper Condamine, Boyne River & Tarong, Barker Barambah, St George and Macintyre Brook.
2. Actual totals may differ due to rounding.

Appendix B outlines all the necessary adjustments to be incorporated into AECOM's historical average, should the QCA wish to retain it. Our appendix notes:

- AECOM applies market-based indexation rates (from different sources) to normalise historical costs to reflect current year prices which understates current costs when applied to Sunwater's specific circumstances.
- AECOM normalises historical costs for labour utilisation on the assumption that the direct labour costs of each service contract reflect regional staff direct labour utilisation only. This is not the case—staff from other regions and Brisbane will also directly bill labour, when

appropriate (eg for the provision of legal advice). While we have not quantified this error, we recommend the QCA examine AECOM's approach carefully to ensure that it has not understated the uplift required.

- AECOM's approach to normalising fleet and travel costs using a six-year average fails to consider the different treatment of these cost categories historically. If an averaging approach is applied, the calculation needs to normalise for the treatment of these costs between years. Otherwise, these costs will be understated.
- AECOM's modelling does not account for the direct operations and maintenance costs of communications infrastructure that has been installed since 2017/18. These costs are not reflected in earlier years' expenditure. Adjustments are required to properly reflect these costs in the base.

In addition to adjusting the costs we have outlined, we urge the QCA to examine all scheme-specific costs, particularly those that show a significant change between the amount spent in 2018/19 and the historical average. Many of our costs have increased, in real terms, due to circumstances outside Sunwater's control, and these will be reflected in recent, actual costs, rather than by a historical average. A summary of these scheme-adjusted costs can be found in Appendix B.

Correctly normalising for all factors when constructing average costs that are appropriately representative of a base year is a complex and time-consuming task. However, if not undertaken correctly the risk of understating current operating requirements is high. This is why standard regulatory practice has evolved to favour the base year step trend approach, consistent with Sunwater's preferred approach.

3.6 Base year electricity costs

3.6.1 Sunwater proposal

For most of the last price path period, out-turn electricity costs were higher than the allowance incorporated into irrigation prices, meaning Sunwater was not adequately compensated for the costs of electricity in providing services to irrigation customers. Our November 2018 proposal included no allowance for the recovery of these costs, on the basis that we would absorb these costs to avoid price shocks for our customers between periods.

Our approach to forecasting electricity costs used a combination of market-based electricity pricing assumptions and step change adjustments for some schemes impacted by a transition away from transitional or obsolete regulated retail electricity tariffs.

3.6.2 AECOM review

AECOM established a starting point for electricity costs using a historical average of annual consumption for each scheme/site. AECOM stated its process involved:

- calculating the average annual consumption between 2013/14 to 2017/18 for each site
- comparing this calculation to site energy data in each year
- selecting the year with consumption closest to the average as the 'representative year'
- using the recorded pattern of demand as well as derived 20-year demand averages to develop a base year cost using the lowest cost tariff.

AECOM's approach resulted in a 6 per cent reduction to total electricity costs across all the schemes, with significant variability on a scheme-by-scheme basis.

3.6.3 QCA draft decision

Base year for bulk water supply schemes

The QCA compared Sunwater's proposed base year electricity costs to AECOM's assessment of the optimal 2019/20 regulated retail electricity tariffs against historical electricity consumption and demand at the individual pump station level. As Sunwater's base year estimates are not materially different from AECOM's alternative estimate for bulk water supply schemes, the QCA accepted Sunwater's revised base year electricity cost estimates for those schemes.[31]

Base year for distribution schemes

The QCA has adapted historical electricity usage models provided by Sunwater[32] to calculate a historical average electricity costs, based on five years of electricity and water usage data. It did not adjust Sunwater's nominated tariffs. For each of Sunwater's five distribution service contracts the QCA has:

- calculated annual electricity costs using historical electricity usage data and current electricity tariffs
- calculated the average fixed costs over the five-year period
- divided the average fixed cost by WAE to get a $/ML fixed cost
- subtracted the average fixed cost from total average costs
- divided the residual amount by the five-year average water usage to get a $/ML variable cost
- taken:
  - the $/ML variable cost and multiplied it by the (almost always much lower) 20-year average water usage to generate a (lower) average total variable electricity cost
  - the $/ML fixed cost and multiplied it by WAE to generate a total fixed cost.

The outcomes of the QCA's estimates are provided below in Table 5.

Table 5: QCA's draft five-year average distribution scheme electricity costs ($2018/19)

Distribution scheme	Total electricity costs (5-year average usage)	Part A ($/ML)	Part B ($/ML)	Total electricity costs (5-year per ML costs * 20-year average usage)
Bundaberg	5,818,294	3.74	51.60	4,306,725
Burdekin-Haughton	6,279,669	3.95	16.86	5,173,720
Eton	486,733	0.09	24.60	539,435
Lower Mary	404,549	2.25	52.34	282,199
Mareeba-Dimbulah	541,000	16.59	66.24	467,328

[31] QCA draft decision, p37.
[32] Sunwater adapted electricity modelling provided by QFF as part of our collaboration on an electricity cost pass-through mechanism. These were then provided to the QCA, who has adapted them further.

3.6.4 Sunwater response

Base year for bulk water supply schemes

In our June 2019 update, Sunwater sought $984,100 in base year electricity costs for bulk water supply schemes, which was approved by the QCA. We note that if the QCA accepts our proposed $2018/19 base year proposal, the electricity allowance for bulk water supply schemes will decline by $220,000 in the base year.

Base year for distribution schemes

Table 6: Electricity costs (distribution schemes)—required changes to QCA historical base year ($2018/19)

Cost category	Total
Base year electricity costs—distribution schemes	324

We note that the QCA has incorporated modelling provided by Sunwater and QFF to estimate base year distribution scheme costs, recognising the value of this analysis. In our work with QFF on the proposed electricity cost pass-through mechanism, QFF representatives expressed strong views about the variability of water usage being best reflected by time-series data. This is one of the reasons Sunwater incorporated QFF's approach in our bottom-up calculations for our proposed electricity pass-through mechanism.

However, there are differences between our application of QFF's methodology and what the QCA has proposed. The most important difference is that the QCA has changed its usage years between estimating the per unit fixed ($/ML of WAE) and variable costs ($/ML of usage), and generating total electricity costs pools for each service contract. This has significant impacts on the costs Sunwater will be able to recover each year, and potentially, if the QCA does not accept our proposal for an electricity cost pass-through mechanism, significant cost impacts for customers in the next price path period if they are recovered through an end-of-period adjustment.

Correlation between water usage and electricity usage

There is a strong correlation between electricity usage and water usage—the higher the water usage, the more likely there is to have been high electricity usage. This is illustrated in Figure 3, which reflects the annual electricity usage (kWh/year) and water usage (ML/year) at each distribution scheme, along with the 20-year average usage rate that the QCA has assumed in determining the total variable electricity costs to be recovered from each scheme.

Based on Figure 3 is it possible to draw a number of conclusions:

- kWh and water usage have been highly correlated in four of five service contracts during the five years shown here.
- If water usage is lower, then in most cases, electricity usage is also lower and:
  - a period of lower average water usage will have lower average electricity costs
  - a five-year period of high average water usage will have high average electricity costs
  - a 20-year period with lower average water usage is probably associated with lower average electricity costs.
- The QCA's 20-year average usage rate is lower than annual usage more often than not. Specifically:
  - every year (Bundaberg and Burdekin Haughton distribution)

- three out of five years (Lower Mary River distribution)
- two out of five years (Eton and Mareeba-Dimbulah distribution).

The last five years of water usage in all schemes except Eton distribution is much higher than the QCA's 20-year average usage rate. For most costs, the difference would not be significant—most of Sunwater's costs are not strongly correlated to water usage. This is not the case for electricity usage. For electricity usage, the higher (lower) the water usage, the higher (lower) the cost.

In modelling electricity costs for its Draft Report, the QCA has used a high water (and electricity) usage period to calculate total electricity costs. Because water and electricity usage in most distribution schemes are highly correlated, we know that if the water usage is above average, then average electricity costs probably will be too. The outcome (totals and per ML costs) is summarised in Table 7.

Figure 3: Historical water and electricity usage (2006/07 to 2017/18)

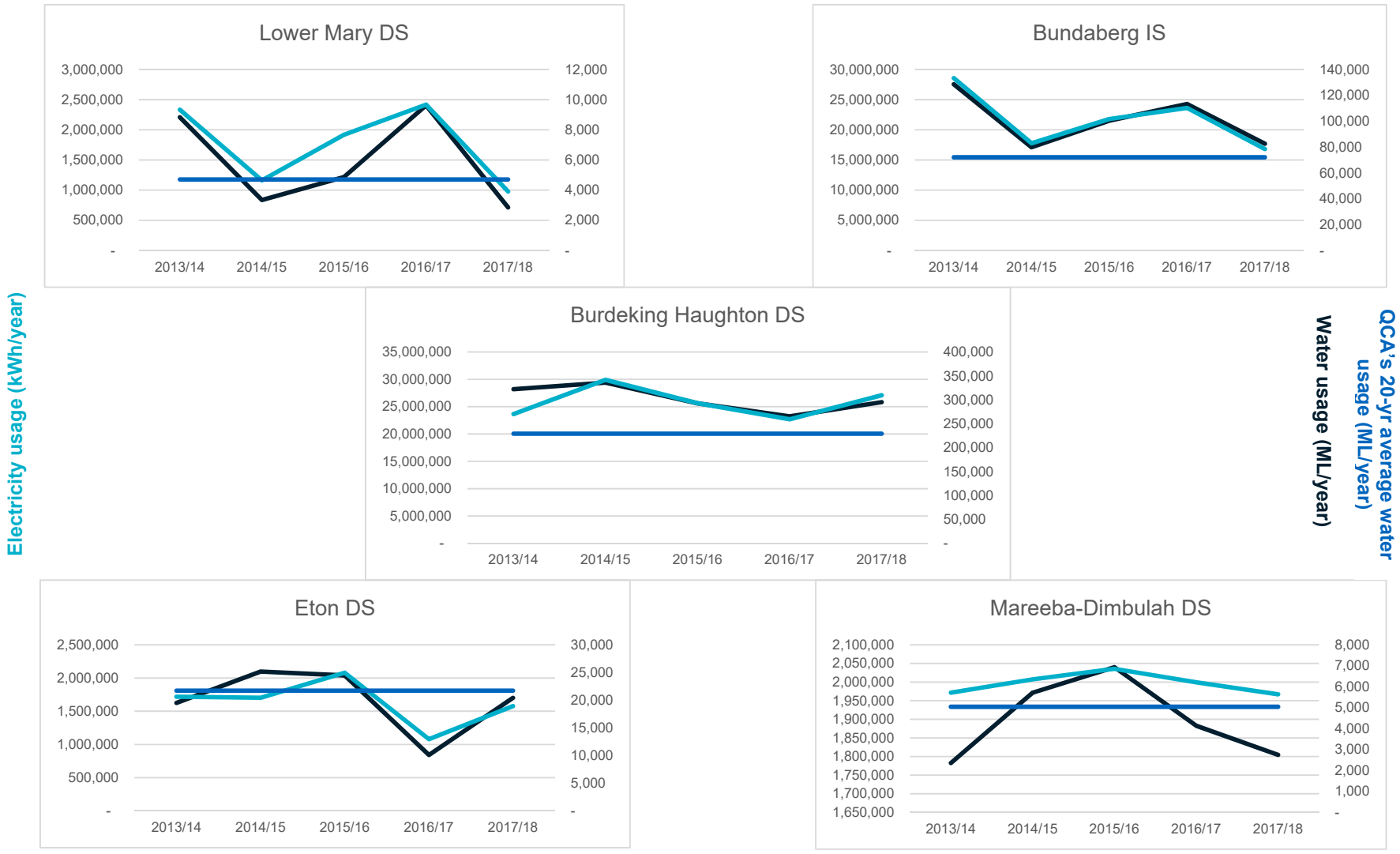

Table 7: QCA's draft historical average base year with consistently applied base year ($2018/19)

Distribution scheme	Total electricity costs	Part A ($/ML)	Part B ($/ML)
Bundaberg	5,818,294	3.74	72.58
Burdekin Haughton	6,279,669	3.95	21.69
Eton	486,733	0.09	22.17
Lower Mary River	404,549	2.25	78.33
Mareeba-Dimbulah	541,000	16.59	80.85

Source: QCA distribution scheme modelling with Sunwater adjustments.

Although this methodology differs to Sunwater's proposed methodology, Sunwater believes that it would be an acceptable approach, had this been the final step in determining electricity costs. However, the QCA made subsequent amendments to total electricity costs to formulate its estimate of prudent and efficient costs. Specifically, the QCA. uses the higher five-year average water usage to calculate low variable costs per ML, and then reconstitutes the total variable electricity costs from the lower 20-year average water usage. Given the correlation between water usage and electricity costs demonstrated in Figure 3, Sunwater does not believe it is appropriate for the QCA to adopt different time series to reduce electricity cost estimates for the purposes of cost recovery.

To remove the inconsistency in the time series, one solution would be to extend the electricity usage backwards to match the water usage data used to calculate the 20-year average water usage. Unfortunately, electricity data is unavailable for the full 20-year period.

Instead, Sunwater proposes that the QCA adopt the lowest of:

- Sunwater's actual 2018/19 electricity costs
- Sunwater's June 2019 forecast costs
- the QCA's unadjusted calculated five-year historical average.

The results of each of these is shown in Table 8. Also shown, for comparison, is the QCA's proposed distribution scheme electricity costs. Aside from illustrating the wide range of possible electricity costs in each of these service contracts, Table 8 also shows that the QCA's proposed electricity costs generally result in a lower cost than the other, unrelated[33] approaches.

Table 8: Base year electricity cost estimation methodologies ($2018/19, $'000)

Distribution scheme	QCA (unadjusted 5-year historical average)	Sunwater (June 2019 forecast)	Sunwater (2018/19 actual)	QCA (5-year historical average cost / 20-year average usage)
Bundaberg	5,818.3	4,527.8	6,751.9	4,307
Burdekin Haughton	6,279.7	5,313.6	5,315.2	5,174
Eton	486.7	646.8	420.3	540
Lower Mary River	404.5	300.0	305.4	282
Mareeba-Dimbulah	541.0	630.9	532.7	467

[33] Sunwater's forecast electricity costs in our June 2019 update were informed by previous electricity and water usage information, but the forecast methodologies are not related.

Given that the QCA has generally accepted Sunwater's approach to electricity management in its Draft Report, it seems incongruent to set an exceptionally low electricity cost target, without combining it with an electricity cost pass-through mechanism. The low electricity costs proposed by the QCA increases the likelihood that Sunwater will under-recover electricity costs in the 2021–24 price path period, resulting in customers in the subsequent price path period having to make-up the shortfall via an end-of-period adjustment.

3.7 Base year insurance costs

3.7.1 Sunwater proposal

In our November 2018 submission, we outlined that the QCA's allowance for insurance costs during the 2012/13 and 2016/17 period was not enough to recover what we spent during the period. We absorbed the under-recovered costs, having considered the potential cost impacts to our customers.

3.7.2 AECOM assessment

AECOM assessed Sunwater's procurement process and found it to be efficient, since Sunwater used the services of a professional broker to obtain competitive premiums via the global market and actively engaged with insurance providers with the intent of negotiating better premiums. AECOM recommended Sunwater investigate a risk-based allocation approach for the allocation of insurance costs but decided not to adopt this approach for the assessment of cost allocations in this review.

AECOM also noted the following about Sunwater's approach to deductibles:

- AECOM felt specifying a single deductible amount for all assets was not clear, given the relatively higher value and risk of dam assets to assets such as pipelines or channels.[34]
- AECOM recommended further investigation into the optimal extent of self-insurance and the most efficient level of deductible.

3.7.3 QCA draft decision

Having considered AECOM's comments, the QCA accepted Sunwater's budgeted insurance costs for 2019/20 (provided in Sunwater's June 2019 update) as an appropriate base year insurance cost. It noted that Sunwater worked closely with our broker to conduct a competitive and rigorous process in selecting insurers over the past year.

The QCA accepted that declared asset values would be a cost driver for insurance costs and supported Sunwater's basis for allocating insurance.

3.7.4 Sunwater response

Table 9: Insurance costs—required changes to QCA historical base year ($2018/19)

Cost category	Total
Insurance costs	-541

We note the QCA's draft decision to accept the 2019/20 insurance costs on the basis that it was sought through a competitive and rigorous process. Since lodging our June 2019 update, our

[34] AECOM (2019), *Rural Irrigation Operational Expenditure Review – Sunwater (redacted)*, p89.

insurance broker has advised of increases in premiums. Final premiums for 2019/20 are 4 per cent higher than the 2019/20 premium previously quoted and used in our June 2019 forecasts. Marsh has also advised that upward pressure on insurance premiums are likely in the future.

We have submitted revised insurance costs for consideration by the QCA in its final decision. The 2018/19 actual insurance costs are slightly lower than the 2019/20 estimate in June 2019. We have adopted the actual insurance costs for 2018/19 but included escalation factors for 2019/20 consistent with the actual premium increases advised by our broker. Section 3.10 outlines our recommended escalation for insurance costs in 2019/20 from our base year.

3.8 Base year non-direct costs

3.8.1 Sunwater proposal

In our November 2018 submission we noted the complex nature of Sunwater's business. It is both geographically diverse and receives revenues from regulated and unregulated sources. Under this type of business model, cost allocation methodologies are important. They ensure that each service contract does not pay more than it should, and they influence the accounting treatment and reporting arrangements within an organisation.

Further complexity is created by organisational change. In Sunwater's case, since the 2012 price review, this has included substantial changes to our underlying business and a number of organisational restructures. Adaptation has been a constant theme for our organisation.

The QCA recognised Sunwater's organisational changes in its Draft Report. These changes were often linked to government policy at the time. Some of the changes noted by the QCA include:

- reviews which commenced in 2012 with a view to Sunwater divesting distributions systems and transferring ownership to separate entities
- restructuring of the organisation in 2013 to separately managed business groups
- adopting a mode (also 2013) that increased reliance on contractor staff. Government policy shifts since that time have reversed this reliance
- further restructuring since 2017, focused on ensuring Sunwater can deliver services to customers at a regional level with a greater emphasis on efficiencies and customer focus within the business.

Amidst these changes, the task of reorganising cost allocation methodologies to keep up with changes with the business environment has been challenging. Both AECOM and the QCA have noted difficulties in being able to properly assess non-direct costs and allocations, given the shifts in approaches and structure within the business since the 2012 review.

In our November 2018 submission, Sunwater was aware that the level of non-direct costs and our allocation approach remained an issue for customers. Feedback from customers was that they preferred less non-direct costs and greater assurance that:

- irrigation customers were only paying for the allocation of non-direct costs that could be reasonably proportioned to irrigation customers
- each scheme was only paying for the allocation of non-direct costs that could be reasonably proportioned to that scheme.

Much of the consultation prior to our submission revolved around more transparency about how different categories of costs are allocated to irrigation schemes. However, cost allocation arrangements at the time of the November 2018 submission were increasing the amount of non-

direct costs being allocated to irrigation customers (with subsequent reductions in direct costs). This increase led to increasing concern from customers around our cost allocation process.

In June 2019, we updated our forecasts in response to questions and concerns regarding non-direct cost allocation and movements between direct and non-direct costs in historical and current years. These updates applied a greater level of direct charging of labour. We also adjusted the four local area support cost rates to be region-specific and made some changes to cost centres which moved them from non-direct categories to direct categories. Finally, the updates incorporated revised corporate support costs, local area support costs and step changes to reflect changes incorporated into the 2019/20 cost base for these items. The effect of this was a lower proportion of non-direct costs accruing to irrigation customers.

3.8.2 AECOM assessment

AECOM noted Sunwater's 2018/19 budget, proposed as the base year in our submission, included adjustments for time-writing changes and recovery of costs which were not recovered in previous years. These time-writing changes resulted from a decision taken in 2015/16 to allow senior staff to stop recording time spent as a direct cost on schemes. Rather than adopting a historical average, AECOM recommended 2017/18 as an appropriate base year for further assessment; this being the most recent full financial year with actuals available for assessment.

AECOM removed some corporate costs associated with 2017/18 on the basis that they should be reallocated to other cost pools in future years or, as in the case of rent, made a negative adjustment to reflect lower costs in future years. However, these negative adjustments were not offset with any positive adjustments.

AECOM also largely ignored Sunwater's proposed increases in corporate support costs associated with Sunwater's Digital Enterprise Business Solutions program and related expenditure, despite recommending that Sunwater improve its documentation and reporting processes.

AECOM suggested that because regional staff were budgeted to reduce, additional resource costs in the People and Transformation[35] cost pool in 2017/18 and beyond should be removed because they would not benefit the irrigation business. Proposed increases in other corporate support areas were also excluded from AECOM's estimate of corporate support costs. AECOM thought that, given the size and value of the irrigation business had reduced since 2012, such additional costs were not warranted for the irrigation part of Sunwater's business.

AECOM's approach to the allocation of corporate support costs is not entirely clear. We believe that the allocation rate is derived from taking the six-year historic average of routine labour costs (with a 4.28 per cent labour utilisation adjustment) and adding the 2019/20 Sunwater budgeted total non-routine labour costs (adjusted back by CPI). AECOM then made additional adjustments to arrive at an adjusted average total labour cost for $30 million and a corporate support costs allocation of 68.2 per cent.

In respect of allocation rates, AECOM noted that the allocator used for recovery from irrigation direct labour was lower from 2019/20. AECOM therefore decided to use this allocator in its base year.[36]

[35] Referred to as the "People and Culture" cost pool in AECOM's report.
[36] AECOM (2019), *Rural Irrigation Operational Expenditure Review – Sunwater (redacted)*, p123.

3.8.3 QCA draft decision

In respect of the level of costs, the QCA was satisfied that Sunwater's historical costs were broadly consistent with the recommendations from the 2012 review, and broadly in line with comparable businesses.[37] The QCA noted that Sunwater's base year costs in November 2018 included an increase in local area support costs, however, it was satisfied with revised expenditure projections for this non-direct cost category provided in June 2019 as they were consistent with historical levels.

In respect of corporate support costs, the QCA found that the increase in costs between 2017/18 and 2020/21 resulted in a forecast for corporate support costs that was higher than historical levels (but still consistent with comparable businesses). AECOM noted that some of these cost increases were the result of movements in cost categories from local area support costs. The QCA therefore relied on AECOM's recommended adjustments to determine the adjusted base year for corporate support costs.

Because the share of the cost base to be allocated to irrigation schemes was lower than the 2017/18 base, the QCA accepted AECOM's recommendation that the share of non-direct cost for 2019/20 is the appropriate share to be used for the base year.

The effect of these decisions resulted in an allowance for corporate support expenditure which is around $4 million lower than what Sunwater expects to spend in 2019/20. The cuts are not related to explicit imprudent operations or inefficient costs. Sunwater maintains that the costs excluded from the allowed corporate support expenditure are directly related to maintaining Sunwater's ability to deliver services to customers and to meet stakeholder expectations with regard to customer service and consultation, as explained in the following section.

Table 10: QCA's draft recommended non-direct base year costs ($2018/19, million) [38]

Cost category	Recommended base year cost
Chief Financial Officer and Finance	5.3
Corporate Services	0.7
ICT	8.5
Legal	0.6
Office of the Chief Executive Officer	2.3
People and Stakeholder Relations	2.7
Procurement	0.3
Total corporate support	**20.4**

3.8.4 Sunwater response

Sunwater recommends the QCA adopt our 2018/19 actual expenditure for the base year for non-direct costs. We have provided 2018/19 actuals as part of our submission. We have proposed adjustments to corporate support costs (see below) to reflect:

- expected reductions in future corporate support costs, notably rent
- necessary adjustments to other cost pools

[37] QCA draft decision, p31.
[38] QCA draft decision, pp.39-40.

- corporate overhead allocation rates consistent with those accepted by QCA
- adjustments for future corporate support costs reflecting investment for improved program and project delivery, as well as financial and asset management
- adjustments for future corporate support costs, reflecting resourcing of key activities for learning and development, and customer and stakeholder management.

Consistent with QCA's approach we have proposed to incorporate these adjustments within the base year amount.

Should the QCA reject our proposed 2018/19 base year, its proposed historical average base year should also incorporate the step changes described below, if Sunwater is to maintain the level of service our customers currently experience and expect.

Corporate support: resource costs

Table 11: Corporate support: resource costs—required adjustments[39] ($2018/19, $'000)

Adjustment required	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)	Adjustment to base year (QCA's historical average only)
EGM People and Transformation	People and Transformation	200	
Change manager	People and Transformation	175	
Learning and development manager	People and Transformation	198	
Strategic program and risk reporting manager	Office of the Chief Executive Officer (CEO)	131	
Value improvement program	Office of the CEO	32	
Portfolio Assurance Committee and Project Management Office	Office of the CEO	250	
Contractor Management Framework	CFO and Finance	250	
Culture Development Plan (included in 2018/19 base year)	People and Transformation		400
Safety programs (included in 2018/19 base year)	People and Transformation		306

AECOM made negative adjustments to Sunwater's proposed corporate support resourcing costs. This primarily related to staff for People and Transformation and the Office of the CEO from the base year. AECOM's explanation was that because the size and value of the irrigation portion of Sunwater's business is declining, there is no reason for irrigation customers to bear unjustified staff increases for People and Transformation after 2017/18.

However, these costs are directly related to Sunwater's continued efficiency, maintaining our customer service levels, meeting community expectations and expanding our technical capacity, all while we go through substantial changes in our business, including transitioning to a lower cost

[39] These amounts need to be added to the base year allowances for corporate support in AECOM's 'Rural Irrigation Opex Review Model v0_AECOM with QCA adjustments' model. These costs form part of the total corporate support costs which are allocated to service contracts based on the agreed CAM.

base for irrigation services. To ensure we can deliver on our commitment to customers, several new positions and programs have been introduced.

- EGM People and Transformation. Sunwater's Health, Safety, Environment and Quality function (encompassing Occupational Health & Safety, environmental compliance, water quality and public liability) has been merged with our People and Transformation function to ensure cultural alignment of these functions across the organisation, and consistency in communication with customers and other stakeholders. As part of the new operating model, Sunwater determined that combining functions with high compliance and communication obligations would be the most efficient way to streamline oversight and approvals, as well as reduce reliance on contractors and consultants. The separation of compliance and human resource functions from corporate services (legal and administration) and finance is consistent with the organisational structure of middle-sized businesses. We have already seen a significant decline in recruiting costs, more fit-for-purpose recruitment (evidenced by shorter upskilling time periods and higher staff retention) and improved cross-resourcing across the business.
- Learning and Development Manager and Value Improvement Program. Following a compliance audit, we invested in additional learning and development resources to ensure appropriate governance around training and skills relevant to the different roles within Sunwater.

  An early gain has been the identification of a lack of accreditation for electricians working on high voltage switchboards. We have codified our obligations as an employer and incentivised targeted upskilling of electricians in regional roles. This has led to lower lead times for work on these switchboards to be undertaken (and lower lost-pumping time) and less reliance on technical specialists being flown in from major cities. As customer and regulator expectations increase, and water resources become more valuable, it will be increasingly important for us to have a flexible, multi-skilled workforce, with high levels of technical, technological and professional prowess.

  Our Learning and Development Manager and Value Improvement Program (the latter of which is almost completely funded by its achieved operational savings) are responsible for ensuring that these activities happen as cost-effectively as possible.
- Change manager. A strong requirement exists for organisational change management as a discipline within Sunwater if we are to continue delivering positive outcomes for customers and our people in a more effective and efficient manner. As part of our Board approved Corporate Plan, we have a high volume of change initiatives planned and underway, many of which have direct implications for our customers. We have provided examples of some of the ways change management delivers value to irrigation customers below.

  Our business is in the process of incorporating new and updated technologies into pretty much every aspect of our business. Change management focuses on achieving smooth transitions with minimal disruption to productivity. Some examples of technology that we have invested in change management effort includes the customer water ordering app, updating our website to meet customer requirements, implementing the meter reading app, upgrading our finance and asset management solution and our communications technology, including the customer contact centre technology.

  Change management also underpins the way we work, from supporting the implementation of our strengthened operating model design and strategic work programs, to supporting our culture. For example, our change manager was an integral part of designing our Customer Experience Program to strengthen our customer centric focus, with training sessions currently

being rolled out across the business to positively influence our culture. Change management is also supporting our safety and innovation journey, focused on embedding our programs to achieve a safe, high performance culture that delivers value and positive outcomes for our customers.

- Portfolio Assurance Committee and Project Management Office. Sunwater has had a period of significant under investment in systems structures, customer relationships and its own people. This under investment has been noted generally by the QCA and AECOM in their review. A part of addressing this under investment and the resulting inefficiencies, decreasing customer relations and the staff retention and operational efficiencies, Sunwater has developed and implemented the Strategic Work program “SWP”. The SWP is a range of initiatives that are managed through the Project Assurance Committee “PAC” supported by the Project Manage Office “PMO”. This a newly created position included to support and provide governance and oversight to not only the SWP but all projects in Sunwater.
- Contractor management framework and ongoing strategic procurement. The implementation of this framework will mitigate identified commercial risks, support the improvement of our contractor safety culture, support contractor compliance with Sunwater standards and requirements, allow Sunwater to build and maintain reputation in water industry as a client to do business with and improve our ability to monitor contractor performance.
- Culture Development Plan. By providing tailored leadership development, embedding learnings through peer coaching, monitoring improved capability and incorporating future strategic leadership capabilities, this Plan will deliver improved employee engagement, retention of key personnel, key person risk reduction and an improved ability for Sunwater to successfully implement our corporate strategy.
- Safety programs. This comprises three separate programs (Safe Driver Program, Health and Wellbeing Program and embedding of the “Switched On” Program) which will deliver a range of benefits including reduced exposure over time to safety-related risks, a more engaged workforce and better vehicle utilisation.

All these costs are related to ensuring we can continue to maintain the services customers expect in the next and future price path periods, at the lowest cost possible. In the last period, many of these functions were outsourced or irregularly funded. This did not meet the needs of Sunwater or our customers, and we are still rebuilding capacity.

These roles are relevant to all aspects of Sunwater’s business, including the irrigation sector, as are the costs associated with them. They cannot be extracted from irrigation services and, in many ways, are directed linked to outcomes that the QCA and customers are looking for in terms of delivering more efficient outcomes for customers.

We are happy to provide additional information if required, but are not in any doubt that we have put in place the corporate support structure needed to meet our obligations as a water service provider and our customers’ expectations.

DEBS program: resource costs

Table 12: Digital Enterprise Business Solutions: resource costs—required adjustments[40] ($2018/19, $'000)

Adjustment required	Adjustment to base year (2018/19 actual and QCA's historical average)
Digital Enterprise Business Solutions (DEBS)	2,136

As part of our consultation with the QCA and AECOM, we outlined in detail some of the issues we face with legacy IT systems. Sunwater underinvested in technology since at least the last price review and has not kept pace with comparable utilities. We operate a disparate set of bespoke applications and outdated commercial products running on multiple technologies supported by multiple suppliers.

Although it is time for new investment, it is important to note that customers have benefited from Sunwater's approach—it has been over 10 years since customers paid for the redevelopment or depreciation of any of Sunwater's legacy systems. Given the pace of technological change, that reflects an exceptionally well scoped investment (at the time), and value for money. It also explains why these costs are not reflected in past actual expenditure.

However, we were already aware that these legacy systems have reached the end of their cost-effective lives, and that was reflected in many of the comments raised by the QCA and its consultant. We expect that without the investment, Sunwater will continue to have inefficient business processes, unstable business solutions, increased operational costs, end user frustration, and inability to effectively complete work in a timely manner. Management decisions, compliance reporting and customer access to online services will continue to be impacted by a lack of timely and accurate information.

In our interviews with AECOM and the QCA, Sunwater outlined our DEBS program, and how it will improve the way we operate. There will be a range of benefits including:

- streamlining business processes and functions
- ensuring better information transparency for decision making
- improving financial management
- enabling transparent cost exposure to customers and the regulator
- streamlining timesheet processing and procurement processing
- simplified financial management
- more accurate scheme reporting.

While this project may generate small direct savings,[41] it is primarily about improving the way Sunwater incorporates technology into our business, at all levels, and optimising efficiencies of scope and scale, so that the rest of the business can operate efficiently.

[40] These amounts need to be added to the base year allowances for corporate support in AECOM's 'Rural Irrigation Opex Review Model v0_AECOM with QCA adjustments' model. These costs form part of the total corporate support costs which are allocated to service contracts based on the agreed CAM.

[41] To reduce the complexity of our proposed adjustments, we have combined the costs and efficiency savings of DEBS, the investment already included in the current base year and its ongoing implementation. This information has already been provided in its disaggregated form, and we can provide further detail if requested.

Many of AECOM's recommendations are linked to the changes that this program will deliver. AECOM's report mentions Sunwater's investment in this program and uses it as a justification of maintaining 0.2 per cent efficiency stretch targets in its forecast costs.[42] Given AECOM has been so critical of current systems and processes, and has largely accepted the need and efficiency of our intended investment, we do not believe that it is reasonable for the QCA not to incorporate the cost of the DEBS program in its base year.

Should the QCA decide not to include DEBS investment in corporate support costs, we recommend that the QCA remove any efficiency targets AECOM assumed could be partly addressed from these new capabilities and redact its qualitative recommendations for process and procedural improvements, as these will not be possible without the DEBS program.

Additional rental costs

Table 13: Additional rental costs—required adjustments[43] ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
Additional rental costs—level six	CFO and Finance	400

Sunwater has needed to expand into additional floorspace to accommodate the Rookwood Weir project team, and the growing needs of ICT and meeting spaces (both internal and external).

We considered a number of options, such as directly costed and resourced premises for the Rookwood Weir project team and accessing third-party spaces for meetings on an as-needs basis.

However, after careful consideration, it has been decided that it is in all our customers best interests if Sunwater remains in a single location and draws on a single pool of corporate services and ICT support.

Although the expansion is a modest increase in rent, it is still less than the premises we vacated at the beginning of 2019, and ensures that both rent and associated support costs are allocated across all directly charged labour.

Calculation of corporate support cost allocation factor

AECOM's approach to allocating non-direct costs to its base year direct costs is quite complex. From what we can interpret in the modelling, AECOM uses the 2019/20 costs for non-direct cost allocations, on the basis that it accounts for reallocation of cost centres since 2017/18. However, the calculation uses a combination of forecast routine labour costs (indexed to 2018/19), historical averages and actual costs. We also found a lack of description of this process and believe customers would benefit from more transparency (and a simpler explanation) around how AECOM has arrived at its revised corporate support costs and allocation rates.

[42] AECOM (2019), *Rural Irrigation Operational Expenditure Review – Sunwater (redacted)*, p132; and, QCA (2019), *Rural irrigation price review 2020–24 Part B: Sunwater,* p53.
[43] These amounts need to be added to the base year allowances for corporate support in AECOM's 'Rural Irrigation Opex Review Model v0_AECOM with QCA adjustments' model. These costs form part of the total corporate support costs which are allocated to service contracts based on the agreed CAM.

3.9 Step changes to base operating expenditure

3.9.1 AECOM and QCA methodology

We noted above that AECOM consolidates a mixture of historical averages, previous and current year costs and, in some cases, future year costs when establishing a base year for forecasting purposes. Because of this approach, some elements which would normally be considered step changes are actually incorporated in base year assumptions. An example of this is rental costs. Reductions in rental costs that are likely to occur into the future were incorporated by AECOM into base year assumptions. We have therefore limited commentary in this section to those step changes that AECOM has applied after calculating the base year.

3.9.2 Recreational facilities

The QCA reviewed Sunwater's revised estimates provided in June 2019, noting that the adjustment to remove recreational facility costs had increased from what we had previously estimated. We note QCA has accepted the adjustment amount as prudent and efficient and included the adjustment as a step change to its forecasts.[44]

3.9.3 IGEM costs

AECOM assessed the scope of works and the cost estimates for Sunwater's response to the IGEM recommendations. AECOM found that the costs were an investment in new capability that appears to be prudent and cost effective, and the estimates were reasonable.[45]

We note the QCA's draft decision to accept AECOM's advice in respect of the required step change in regulatory obligations for IGEM recommendations, as well as AECOM's assessment of the prudency and efficiency of those costs. Finally, we note that the QCA has adopted Sunwater's approach to allocating IGEM costs to schemes.

3.9.4 QCA regulatory fees

We note that the costs incurred by the QCA in respect of the irrigation price review are forecast to be $3.1 million. Because the referral limits the recovery of QCA costs from irrigation prices at $2.5 million, we note the QCA has apportioned what it considers is the Sunwater proportion of the capped amount ($2.36 million) applied evenly across the price path period (in NPV neutral terms).

3.10 Input price growth

Our November 2018 submission proposed escalation factors using market parameters based on what the QCA applied in recent decisions. For the most part, the QCA maintained the same methodology in its draft decision, with amended escalation rates to reflect the most updated information.

We identify in the sections below parameters that have already changed since the draft decision. However, we have not updated models for these revised escalators. We expect market parameters will change further and the QCA will adjust escalation rates to reflect the most recent market data prior to making its final decision.

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[44] QCA draft decision, p42.
[45] AECOM (2019), *Rural Irrigation Operational Expenditure Review – Sunwater (redacted)*, p102.

3.10.1 Inflation forecast

Sunwater proposed input price growth assumptions using a method that the QCA adopted in recent pricing investigations, updated for the most recent economic information where appropriate. Sunwater's approach used the RBA's latest short-term inflation forecast, where available. For years where a short-term forecast was not available, we adopted the mid-point of the RBA's target range. AECOM accepted the approach proposed by Sunwater as it was consistent with standard regulatory practice.

We note the QCA's approach departs from its previously adopted practice of estimating inflation. In its draft decision, the QCA updated the proposed CPI forecast using the most recent market-based information but also used a different methodology that calculates a constant CPI for each year of the price path period using a geometric average of escalation factors between 2020/21 and 2023/24.

The QCA has not provided any reasoning in its draft decision for why it has changed the approach to input price growth from what it has previously applied in other decisions. However, other regulators have adopted a geometric average for inflation when calculating the Weighted Average Cost of Capital (WACC). The AER applies a ten-year geometric average (rather than an arithmetic average) on the basis that it is a better representation of cumulative rates of change. This approach appears more focused on establishing a WACC across all forward years. The AER also usually applies the geometric mean to the full 10 years incorporating RBA short-term and medium-term forecasts.

It is also not clear from its draft decision why the geometric average is applied to a four-year forecast, when other regulators use a longer term. A 10-year term would also appear consistent with the QCA's approach to estimating labour costs for 2023/24 where the QCA uses a 10-year average of the Australian Bureau of Statistics' (ABS) Wage Price Index (WPI) as the forecast.

Finally, the draft decision does not explain why the QCA selectively chose to apply a geometric average beginning in 2020/21 rather than applying the average to all years where actual CPI data is not available.

The QCA's inflation estimates for 2018/19 and 2019/20 appear to be based on the RBA's May 2019 Statement of Monetary Policy. We now have an actual inflation observation for 2018/19 of 1.59 per cent[46] and a downwards revision of 2019/20 forecasts based on the August Statement of Monetary Policy.[47]

We therefore note the QCA's draft decision. We also consider there may be benefit in providing customers more explanation around the approach it has adopted.

3.10.2 Labour

The labour escalation for wages should be based on the Sunwater Enterprise Agreement, currently being negotiated under the Queensland Government-approved bargaining framework, for the period 2018–2021, which includes pay increases of 3 per cent per annum and no forced redundancies.

3.10.3 Materials, contractors and non-direct costs

We understand that for input price escalation for materials, contractors and non-direct costs, the QCA has applied the same methodology for establishing escalation rates as what Sunwater

[46] Refer to https://www.abs.gov.au/ausstats/abs@.nsf/0/938DA570A34A8EDACA2568A900139350?Opendocument
[47] Refer to https://www.rba.gov.au/publications/smp/2019/aug/

provided in our November 2018 submission. Differences relate to the CPI methodology adopted by the QCA in its draft decision and the updated WPI forecasts. We expect pricing inputs to change again before the QCA's final decision.

3.10.4 Electricity

In November 2018, Sunwater adopted input price escalation factors for electricity using the most recent independent forecasts of wholesale electricity prices. However, we expected departures from market rates for some sites due to the cessation of transitional and obsolete tariffs during the next price path period. If a service contract included a connection point assigned to a QCA-determined transitional or obsolete tariff, and the impact of the transitioned tariff resulted in a substantial cost change to the service contract, we applied a price escalator based on the weighted average of the price movements for all transitioning tariffs and non-transitioning tariffs in the service contract, weighted by average use for each of the connection points.

The QCA largely adopted Sunwater's site-specific electricity cost escalators for bulk water supply schemes, with appropriate adjustments to reflect the change in timing of the phase out of transitional and obsolete electricity tariffs. The QCA also applied the real escalation rates to the QCA's revised CPI assumptions.

For distribution schemes, the QCA modified AECOM's analysis to reflect the specific step changes likely to occur between fixed and variable costs when schemes move from transitional and obsolete tariffs to standard business tariffs in 2021/22.

We have reviewed the outturn escalation rates underpinning the QCA's forecasts in the context of the latest market information. In August 2019, the Australian Energy Market Operator (AEMO) released its 2019 Electricity Statement of Opportunities (ESOO) which includes revised assumptions on forecast movements of wholesale prices in Queensland. A comparison of wholesale price assumptions between 2018 and 2019 are provided in Table 14.

Sunwater requests that the QCA use the updated escalators in its final report.

Table 14: Comparison of real electricity escalators, 2018 ESOO to 2019 ESOO

	2020/21	2021/22	2022/23	2023/24
Real escalator (September 2018; Neutral scenario)	-4.48%	1.17%	6.38%	-2.87%
Real escalator (September 2019; Central scenario)	0.38%	-0.62%	-0.87%	-1.09%

For site-specific escalation adjustments, Sunwater has compared AECOM's choice of standard tariffs to apply once the transitional and obsolete tariffs end in 2021/22 against recommended tariffs put forward by our independent consultant. Where there were discrepancies between tariffs, we have checked our proposed tariff against Ergon Energy's Tariff Comparison Tool to ensure it remains the most efficient tariff selected. Our analysis also assumes that transitional and obsolete tariffs have a zero nominal escalation if the AEMO escalation is less than zero. This is consistent with previous decisions made by the QCA for these tariffs.

We have examined the QCA modelling provided, but have not been able to reconcile all of the differences to what we proposed. Our analysis has highlighted schemes where the QCA escalation

is materially lower than ours. We would like the QCA to review the following calculation discrepancies relating to 2021/22:[48]

- Bundaberg distribution:
  - The QCA has modelled lower escalation rates, based on its acceptance of the AECOM-recommended tariff for the Quart Pop pump station. It is our understanding that this site is not eligible for AECOM's recommended tariff (51C). The QCA should adopt the Ergon Energy Tariff Comparison Tool which recommends tariff 51D.
  - AECOM has calculated a 28.34 per cent step change increase for this scheme, which is less than Sunwater has calculated (31.85 per cent).
  - North Gregory pump station requires data for the step change year in AECOM's model—currently blank.
- Burdekin Haughton distribution:
  - AECOM has recommended that the optimal tariff for Dalbeg B pump station is tariff 66 (currently this site is on tariff 62), however, the site cannot transition to an obsolete tariff. Both our consultant and Ergon Energy's Tariff Comparison Tool indicate that tariff 50 is the preferred tariff for this pump station (both currently and after the step change).
  - Millaroo Relift pumps, BMC/B8 Relift pumps and Dalbeg Relift pumps require data for the step change year in AECOM's model—currently blank.
- Eton distribution:
  - While Sunwater and the QCA agree on the recommended post transitional tariff for the Victoria Plains Pump Station, the QCA calculated a much lower percentage change increase (7.78 per cent) compared to both our (63.79 per cent) and Ergon Energy's Tariff Comparison Tool (86 per cent real) estimates.
  - While Sunwater and the QCA agree on the recommended post transitional tariff for the Mt Alice Pump Station, the QCA calculated a much lower percentage change increase (31.11 per cent) compared to Ergon Energy's Tariff Comparison Tool's estimate (83 per cent real).
  - While Sunwater and the QCA agree on the recommended post transitional tariff for the Brightly Pump Station, the QCA calculated a much lower percentage change increase (33.42 per cent) compared to our (53.56 per cent) and Ergon Energy's (74 per cent real) estimates for this step change transition.
  - The QCA has suggested a step change for the Oakenden Pump Station electricity costs of 42.27 percent. However, Ergon Energy's Tariff Comparison Tool indicates the appropriate tariff is Tariff 45, with a recommended increase of 230 per cent. If the QCA's preferred tariff is adopted, Ergon Energy's Tariff Comparison Tool suggests a tariff increase of 265 per cent.
  - Abingdon pump station requires data for the step change year in AECOM's model—currently blank.

We request that the QCA review the modelling and advice underlying each of these issues, particularly those where Ergon Energy's Tariff Comparison Tool suggests a different tariff or increase and/or where data is missing.

[48] To assist the QCA, we have commented on changes in site-specific electricity costs assuming the AEMO escalation rates used by the QCA in its Draft Report. We assume the most recent escalation rates will be used in the final decision.

Sunwater's proposed escalators, based on our own analysis are shown in Table 15. These changes are also outlined in the additional material Sunwater has provided to the QCA.[49] Note, these escalators do not incorporate the updated AEMO electricity escalators.

Table 15: Sunwater proposed electricity escalation factors—distribution schemes

Distribution scheme	2019/20	2020/21	2021/22	2022/23	2023/24
Bundaberg	-2.68%	-0.78%	31.85%	8.90%	-0.57%
Burdekin Haughton	-11.13%	-1.75%	2.84%	7.99%	-0.57%
Eton	-0.36%	-0.11%	46.89%	8.90%	-0.57%
Lower Mary River	-0.01%	0.00%	41.18%	8.90%	-0.57%
Mareeba-Dimbulah	-0.32%	-0.09%	11.55%	8.90%	-0.57%

Sunwater recognises there is uncertainty around the precise changes in tariff rates between years. We reiterate the importance of ensuring neither customers or Sunwater are worse off by out-turn pricing outcomes which are different to what was forecast, and note that Sunwater's proposed electricity cost estimation methodology and pass-through mechanism, with associated reporting and communication innovations, would mitigate the uncertainty around future tariff rates and ensure revenue adequacy for Sunwater. It would also eliminate the potential need for a large end-of-period adjustment.

3.10.5 Insurance

We note the QCA's draft decision to accept our assumptions regarding escalation of insurance based on its revised methodology for calculating inflation. Insurance costs are often difficult to forecast. In the previous price path period, insurance premium costs were much higher than either Sunwater or the QCA expected. Irrigation prices therefore were not enough to recover our efficient insurance costs.

Our advice from experts is that there is a heightened risk that insurance costs will outstrip general increases in CPI going forward. We have already received advice from our insurance broker that 2019/20 insurance premiums are 4 per cent higher than what was budgeted in our June 2019 update. This represents a 12 per cent escalation on 2018/19 actuals.

As Marsh continues to maintain a negative outlook on future premiums, we find it hard to justify why a geometric average of inflation be used as an escalation factor for insurance over the next price path period. We do not believe this level of escalation is likely to be sufficient for a prudent and efficient forecast of insurance costs. Sunwater's insurance premiums are affected by the value of our assets (which generally increase at above-CPI rates). Each year's higher asset values are used to estimate our new insurance premium, which means the annual increase is more than the geometric average of inflation. Even if our insurance rates were to increase at the same rate as inflation, our premium would be increasing faster because of the increasing value of our asset base.

Sunwater proposes that the QCA adopt our 2018/19 actual insurance costs in the base year—the procurement of which has been deemed prudent and efficient—and escalate these costs in 2019/20 by 12 per cent. Thereafter, a 10 per cent per annum increase should be applied.

Should the QCA retain its proposed escalation rates for insurance, we consider it will be especially important to clarify and enable a mid-period review or end-of period adjustment process for costs

[49] Supporting material_QCA scheme-specific electricity escalators DS_SW changes.

that are higher than forecast (as per the cost risk mechanisms discussed earlier in this submission).

3.11 Continuing efficiency target

In our November 2018 submission, we noted substantial challenges in maintaining efficiency in the face of price input pressures and a declining cost base. Our submission noted a number of initiatives we had undertaken to continue to deliver services efficiently. We also noted our decision not to seek an end-of-period adjustment for out-turn efficient electricity and insurance costs which were not recovered through irrigation prices. Finally, we proposed a global efficiency target of 0.2 per cent for each year to 2023/24.

The QCA has accepted our proposed efficiency initiatives. However, it has also significantly reduced our base operating expenditure to below what we are spending now and has not allowed investment we believe is essential to deliver some of these efficiency gains. Our submission outlines the reasons why we believe the QCA should reconsider its decision on these matters. If the QCA retains its draft decision on these key elements, we do not believe it is appropriate for the QCA to continue to apply the same efficiencies that Sunwater proposed on a higher forecast cost base, including investments in operational efficiencies. The efficiency target should therefore be removed in this circumstance.

4. Renewals expenditure

4.1 Our positions at a glance

Renewals expenditure		
Asset planning and management		We have provided the QCA with more context around our forward approach to asset planning in response to highlighted opportunities about our use of a single decay curve and our new approach to options analyses.
Historical renewals expenditure		We have responded with additional information on two projects where the QCA's consultant made adjustments on the basis that the issues with those projects were systemic to the entire historical renewals program. We have also highlighted potential errors in the consultant's calculations and request the QCA to review prior to making its final decision.
Historical non-routine corrective maintenance expenditure		The QCA has accepted the recovery of non-routine corrective maintenance costs via the annuity. Agreement on the 2011 insurance claim for Boondooma Dam and the 2013 insurance claim has now been reached and we expect the QCA to update its final decision to include net costs in the respective annuities.
Historical non-routine operational expenditure		We accept the QCA's draft decision to include non-routine operational expenditure in the annuity and Sunwater's proposed expenditure.
Renewals expenditure in the price path period		We accept the QCA's draft decision. However, Sunwater has identified a potential error in the consultant's calculations and we request the QCA to review prior to making its final decision.
Renewals expenditure beyond the price path period		We note the impact of the consultant's recommendations is to move price impacts to future price periods. As with other areas of the renewals program, we have identified potential errors in the calculations by the consultant. As a result of these errors, we believe the global adjustment for systemic issues has been overstated. We request the QCA to review prior to making its final decision.
Proposed Dam Improvement Program capital expenditure		We support the QCA's draft decision to accept the costs put forward by Sunwater.

4.2 Summary

Sunwater's November 2018 submission included historical renewals expenditure of $173.4 million for the 2012/13 to 2019/20 period and proposed renewals expenditure of $61.8 million to be spent between 2020/21 to 2023/24. In June 2019, we revised our forecast to $70.7 million to reflect updated information.

The QCA engaged AECOM to assist with its assessment of the prudent and efficient level of renewals expenditure and dam safety upgrade capital expenditure. This process[50] involved:

- reviewing asset planning and management practices to ensure they are consistent with industry best practice

[50] QCA (2019), *Draft report, Rural irrigation price review 2020–24, Part B: Sunwater*, August 2019, p56.

- using a sample of projects to assess the prudency and efficiency of historical renewals expenditure as well as forecasts
- assessing the forecast methodology and approach to cost estimation to identify any systemic issues in the renewals planning process
- where systemic issues exist, identify how these may affect the practical application of the renewals planning process.

The QCA largely accepted AECOM's recommendations resulting in a reduction in the amount of historical renewals costs being accounted for in our annuities, as well as a reduction in forecast renewals expenditure to what we proposed.

Sunwater has responded with additional information to support our historical or forecast renewals expenditure where we do not agree with AECOM's recommendations. We have also identified several potential errors in AECOM's calculations which the QCA should investigate prior to making its final decision. We have also provided a response below in relation to AECOM's observations on our asset planning and management practices, including the use of a single decay curve and our new approach to options analyses.

4.3 Asset planning and management

AECOM was engaged by the QCA to undertake a desktop review of renewals expenditure using the approach outlined above. In AECOM's view, best practice asset management and policy incorporates inspection and maintenance regimes which are developed to understand actual performance of the assets, with procedures put in place to adjust the expected age of asset failure based on established condition at points during the life cycle.[51] AECOM was not complimentary on a number of aspects of Sunwater's asset planning policies. It rejected Sunwater's use of a single decay curve for projecting our future renewals program and did not support our new approach for options analyses. AECOM also reported deficiencies in respect of documentation and project management.

The QCA accepted AECOM's conclusions in relation to Sunwater's asset planning and management process. The QCA recommended that Sunwater should, as a matter of urgency, consider:

- improving our predictive maintenance and asset condition reporting arrangements to better inform the timing of asset replacement
- reviewing our cost estimation approach and ensure that asset values are based on modern equivalent replacement values where appropriate
- developing transparent guidelines for options analyses.

The following sections provide more detail of the AECOM review and Sunwater's response to its findings.

[51] AECOM (2019), *Rural Irrigation Capital Expenditure Review – Sunwater (redacted)*, August 2019, p36. Also referred to as "AECOM's capex report" in this submission.

4.3.1 Examination of policies, procedures and practices, with reference to best practice

AECOM position

AECOM reviewed policy documentation put forward by Sunwater and made the following observations:

- Sunwater's Strategic Asset Management Plan is aligned to ISO55001:2014, provides sufficient intent for a comprehensive understanding of assets and considers whole of life implications in relation to customer service targets. However, AECOM expected the plan to include responsibility for the optimisation of total expenditure.[52]
- Sunwater's processes and procedures used to identify and plan for asset renewal are well documented and comprehensive.[53]
- Condition assessments for most bulk water assets are complete. Because of this, AECOM expected the accuracy of renewals planning to have improved since the 2012 review.[54]
- Sunwater's asset management plans provide line-of-sight from customer service targets to assets strategies, and through to work programs. These asset management plans include minimum acceptable standards, although AECOM expected to see service level expectations based on duration as well as frequency.[55]
- Best practice asset management planning would include explicit reference to risk; that is, a link between total expenditure and the impact of failure for customers. In AECOM's view, Sunwater's Asset Management Policy was deficient in these aspects.[56]

AECOM's main concerns centred around two key issues—the continued use of a standard asset decay curve for long-term renewals planning and Sunwater's approach to analysing options for renewals projects. These are described in more detail in the sections below.

Sunwater response

In our November 2018 submission to the QCA, we noted our customer focus in the context of asset management policy and strategy. This began with an organisational focus with the merger of bulk water and irrigation asset management divisions, and has continued through asset management processes which align to the ISO 55000:2014 standard of asset management.

We noted that our "whole of life" approach to asset management means that service contracts are maintained with specific standards in perpetuity, but at minimal cost and in a safe and environmentally responsible manner. We separately engaged Jacobs to review and confirm our existing risk assessments. We also noted AECOM's work in generating project scopes and cost estimates for a number of higher value maintenance projects. Finally, we noted that we were implementing further improvements in the short term, including renewed portfolio, program and project management systems to support the way we manage projects.

Sunwater has reviewed AECOM's observations. These observations are timely as the Strategic Asset Management Plan is being reviewed and updated in line with our asset management improvement planning process. As part of this process we will review our strategic planning as well

[52] Ibid., p37.
[53] Ibid., p40.
[54] Ibid., p41.
[55] Ibid., p58.
[56] Ibid., p36.

as our core asset management processes. We will incorporate feedback from AECOM's report into our review, which is expected to be finalised by 30 June 2020.

In respect of substitution possibilities between renewals and maintenance, our goal is to manage our assets (and the assets we manage for others) in a sustainable and commercially focused manner, to safeguard asset integrity and ensure optimal service value to our customers, in accordance with our strategic goals. Optimal service value requires a balancing of risk, cost and performance which necessarily takes into account both capital and operating expenditure considerations. An example of how Sunwater has considered substitution possibilities in the past to deliver optimal service value to customers is provided in Box 1. Based on feedback from AECOM we will clarify how we consider capital and operating expenditure considerations in future plans.

In relation to AECOM's concerns around service targets, our Water Supply Arrangements and Service Targets documents for each scheme (where applicable) outline service level expectations, including interruption duration targets. The service levels are inputs for planning renewals, in terms of scheme availability and asset performance. We will clarify these important linkages as part of our revisions.

Box 1: Delivering optimal service value for customers

Sunwater identified exposed siphon pipes after flood damage inspections of the Oakenden Main Channel following Tropical Cyclone Debbie. Before the flood damage, there were no documented repairs or a failure to meet service standards. The siphon pipes were also in a satisfactory condition after the event. However, their exposure raised concerns about the stability of the left bank of Oaky Creek and the long-term integrity of the siphon pipes and associated assets.

We evaluated several options, including undertaking remedial works. However, re-aligning the siphon would have been a significant undertaking, requiring removal of existing functional assets. The project also had the potential to increase erosion risk to the Sunwater channel by disturbing in-situ material which has previously withstood erosion pressure. Finally, we suspected future rain events would silt over the exposed pipes.

Sunwater therefore decided to maintain routine inspection and maintenance regimes, with targeted inspections post significant rainfall events. A future site inspection showed that, as expected, recent rain events had silted over the previously exposed pipes. Our decision not to undertake remedial works—a decision reached by applying our existing asset management approach—minimised costs to our customers.

4.3.2 Decay curves

AECOM position

In its report, AECOM viewed best practice as renewal planning which focuses on the economic optimum for the critical asset, and an asset plan which sets out asset maintenance requirements and expectations of service life, based on the optimisation of the total cost of owning the asset and the risk cost of failure.[57] AECOM suggested that:

> *…projecting asset performance into the future is done by deriving an expected risk of failure of each asset type based on experience gained (and informed by the manufacturer, other users or industry experience) and assuming an ongoing*

[57] Ibid., p35.

degradation of asset condition reaching an unacceptable condition (risk of failure) at the end of its expected service life.[58]

AECOM also noted that service life and rate of deterioration vary between sites and therefore local experience is often a key consideration. Failure curves are routinely assumed initially to be a normal distribution and refined for local considerations.

AECOM referenced information provided by Sunwater in 2011 in respect of our intention to undertake a detailed analysis of historical condition and maintenance data to develop a family of standardised decay curves for different asset classes. AECOM suggested that the methodology outlined in 2011 would deliver a result consistent with best practice, but was never acted upon by Sunwater. AECOM was also critical of our continued practice of using a standard asset decay curve. While Sunwater did reflect a change in strategy which resulted in increases to planned service life for some assets, AECOM expected evidence of asset failure rates to inform service life replacement. It also found that the use of a fixed multiplier in estimating the renewal of critical assets was not realistic, because it represents an indication of failure based on a curve which AECOM describes as "suspect".[59]

Sunwater response

Sunwater deems best practice is considered in respect of ISO55001. This standard does not prescribe a universal methodology that all businesses should adopt. Rather, the standard reflects the need for organisations to develop systems and tools, where justifiable, to automate or facilitate asset replacement and rehabilitation decision making. The standard references the need for capital and operating expenditure projections for short, medium and long (five,10 and 20 year) timeframes and with a defensible level of accuracy.

In this respect, AECOM correctly noted that local, site-by-site experience and knowledge must form part of the process for establishing standard lives. Importantly, statistical probability and industry averages form the basis of traditional decay curves. Traditional decay curves do not incorporate the operating context, routine maintenance and monitoring techniques employed to manage the asset. In contrast, our revised asset strategies take into account site-specific information, using the knowledge and experience of scheme and senior managers from across the state.

In our November 2018 submission, we also noted that while we had committed to introducing additional decay curves matched to different asset classes, with further investigation Sunwater found that there was insufficient information on asset decay to generate curves for each of the asset families. Most of the assets have medium to long-term asset life cycles and subsequently have a slow rate of deterioration. Deriving and maintaining decay curves for asset classes would be a time consuming and costly exercise in an environment where customers are increasingly concerned about the level of non-direct costs. Each time a decay curve is adjusted, the lives of all related assets would need to be reviewed.

Our preference was (and continues to be) to prioritise improvements to a reliability centred maintenance program. Sunwater uses the decay curve as an indication for a renewals profile, but condition and performance data are used to inform and prioritise the works program. Where relevant data for an asset is not recorded, unavailable or not financially practical to acquire, asset age is used as an input. Asset age is also an input to condition assessments for assets with age dependent failure modes, but it is not the sole input.

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[58] Ibid., p35.
[59] Ibid., p39.

Moving forward, we plan to incorporate routine maintenance along with condition inspection data, asset performance levels, customer impact risk and cost inputs when establishing our future renewals program. We have incorporated this into our updated non-routine planning and delivery process. We also expect whole of life asset management improvements to be implemented as part of our asset management improvement plan from 2020/21.

This will require investment in digital asset management and associated systems. However, in our view, this approach is less costly and provides better value for money than investing in a series of decay curves for Sunwater's assets.

4.3.3 Options analyses

AECOM position

AECOM did not accept Sunwater's threshold for determining whether forthcoming renewals expenditure is subject to an options analysis. While AECOM thought it was "reasonable in logic"[60] to establish non-financial materiality criteria, the criteria chosen were not measurable and would likely result in an inconsistent and uncertain application. In addition, while Sunwater noted that our methodology gives customers more control over which projects are selected for an options analysis, AECOM found no formal evidence that this had occurred.

A financial threshold, similar to the one proposed in 2012, was considered a more appropriate approach. Alternatively, AECOM suggested that more detailed guidelines be produced with an aim of encouraging consistency.

In respect of Sunwater's submission that the development of an options analysis for projects up to 20 years in advance is unlikely to be an efficient use of resources, AECOM agreed that this was a reasonable concern for renewals projects which commence beyond the price path period. However, AECOM found the argument did not hold for projects likely to commence in the short term. AECOM also responded to concerns about conducting an options analysis for a large number of projects did not add value for customers. Its view was that the value of the process could be improved if Sunwater increased the number of options being considered.

Sunwater response

In response to AECOM's comments, Sunwater is refining our approach to analysing options so that projects are based on a program tier rating which defines both the methodology and the standard options analysis to be used. Sunwater notes that around 90 per cent of our renewals program has an average cost of $40,000 or less. It is questionable whether customers are willing to pay a higher cost for Sunwater to undertake an options analysis for projects of this size. In our conversation with customers, there has been little appetite for higher costs on projects. In fact, when discussing the renewals program, the view expressed by many customers is that options analyses are the most inefficient component, providing little value and adding additional costs particularly for projects that have an obvious scope and need (eg replacing a switchboard).

Sunwater has expanded our planning horizon to a forward 18 months plus a 12-month window. We have not extended our methodology beyond this period on a rolling basis. We accept that investing heavily to incorporate a detailed options analysis for all future material projects in the 2021–24 period would have made the task of assessing the forecasts easier for the QCA and its consultant. However, we do not believe the benefits for the customer outweigh the additional costs, including potential costs of reworking the analysis closer to the investment trigger.

[60] Ibid., p43.

4.3.4 Cost estimation, procurement and project management

AECOM noted the view of previous QCA consultants that Sunwater's adoption of like-for-like replacement as a basis for calculating replacement is unlikely to factor in technological advancement in forward cost estimations and will result in an overestimation of costs. It considered that actions taken by Sunwater via the irrigation systems asset revaluation project to calculate assets using modern equivalent asset replacement (where possible) would have improved the accuracy of renewals planning. AECOM further noted that there was no evidence of renewals validation occurring, or scheduling efficiencies being provided for, outside the 12-month period.

Following its desktop review of procurement procedures and practices, AECOM observed several opportunities for improvement in relation to:[61]

- quality control of issued documents
- review of procurement limits
- bribery and facilitation payment prohibition
- Sunwater's records management process.

Finally, while AECOM recognised improvements in place for Sunwater's project management framework, it was concerned that the new framework[62] was overly complex and may not deliver value for money unless it is clear and concise. AECOM also expressed concerns that the framework does not give sufficient weight to the monitoring and control element of the project life cycle. AECOM found instances where monitoring and controlling of ongoing projects has been found lacking.

Sunwater response

In addition to the asset revaluations, our technical specification process identifies new technologies that should be considered for the specific project under review. In situations where identified technological advances lead to lower cost solutions, these are rolled out for other relevant projects across the different schemes and are incorporated into future projects in the form of technical standards and/or technical scopes.

We noted in the previous chapter, important investments in digital capabilities to improve the efficiencies of our business. The Finance and Asset Management Solution being developed as part of this program will also enable easier use of updated costs to be used for like assets. This is another reason why the QCA should revisit its decision on our investment in the DEBS program.

As noted above, Sunwater has expanded our planning horizon to a forward 18 months plus a 12-month window which will improve renewals validation and scheduling efficiencies.

Sunwater notes AECOM's comments in relation to opportunities to improve our procurement procedures and practices. We will consider these improvements in future revisions.

In relation to project management, Sunwater finalised our Portfolio, Program and Project Management Framework (P3MF) in June 2019. The final version incorporated changes to process maps, with a focus on making them fit for purpose. Initial feedback received from the training sessions held in July 2019 has been positive, with project managers and teams able to easily navigate and understand the new processes. The common language and "one stop shop" on Sunwater's intranet will also ensure consistency across the organisation.

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[61] Ibid., p53.
[62] Based on the draft framework provided by Sunwater as part of the request for information process.

As the tools and processes have been rolled out, Sunwater now has a basis against which to monitor and control both medium-size and major projects. We have also procured a P3MF software system to automate and generate data and information from all projects captured under the framework. The system is configured with gate reviews and approvals to ensure higher-level governance and control through each phase. In addition, projects will be monitored and controlled in a consistent structure (including key performance indicators, costs, schedules, risks, scope and benefits), therefore leading to greater confidence in the status and performance of the projects.

Sunwater recognises the new project management framework may be too complex for minor projects, which are typically task-related or maintenance work. Further work is being progressed to determine the most appropriate and fit-for-purpose system and processes for these projects.

4.3.5 Consultation

AECOM found that while Sunwater's consultation with customers was appropriate, there were deficiencies in the content of the Network Service Plans, such as no justification for variances. It also noted that it had not sighted a formal process for incorporating customer feedback in respect of selecting projects for an options analysis.

Sunwater response

In 2018, we developed a new Network Service Plan template with our customers' feedback on what they were interested in seeing in mind.[63] We focused on providing greater transparency of costs and projects, and made the plans shorter, clearer and less technical. Several customer representatives were interested in explanations of the variances in our forecast renewals program. We indicated in our November 2018 submission that we planned on reporting on variations to our non-routine program of works for the most recently completed financial year in future Annual Performance Reports. Our 2018/19 Annual Performance Reports, which are currently being prepared, will provide this information.

We will take on board AECOM's comments on incorporating customer feedback on which projects are selected for an options analysis as part of our asset management improvement plan.

4.4 Historical renewals expenditure

As part of its review, AECOM examined 17 historical renewals projects across bulk water supply schemes and distribution systems. AECOM found that Sunwater's historical renewals expenditure was generally prudent and efficient. Where cost over-runs occurred, AECOM could reconcile this to the fact that the project was underbudgeted or not fully scoped.

AECOM recommended expenditure incurred for four projects be reduced by approximately $450,000 ($2018/19). AECOM believed these issues to be systemic across the renewals program and consequently recommended a global deduction of 4.2 per cent be applied to all historical renewals projects. The QCA accepted AECOM's recommended adjustments, as well as the recommendation to apply the adjustment globally across all historical renewals expenditure.

The QCA also accepted AECOM's recommendation to adjust expenditure related to renewals projects occurring between the historical period and the start of the new price path period (what the QCA and AECOM call the "transitional period"). Of the 36 projects reviewed, AECOM recommended adjustments to two projects of $108,000 ($2018/19) for project specific issues and reductions to four projects due to project scoping, cost estimation, procurement, project

[63] Refer to Appendix A of our November 2018 submission.

management and documentation issues (approximately $456,000 in $2018/19). AECOM considered that these issues were systemic across the program of works and recommended a 5.1 per cent reduction to all other renewals expenditure in the transitional period.

4.4.1 Historical renewals – Adjustments for systemic issues

AECOM position

AECOM identified issues associated with project scoping, cost estimation, project management and supporting documentation. AECOM also found a lack of offers through the procurement process; in its view, due to delays in engagement. It also noted regular use of procurement exemptions, mostly due to urgency. While some of these exemptions were justified, AECOM considered there was a gap in oversight and judgement in relation to exemption decisions.

Sunwater response

Based on the sample of projects reviewed, AECOM found that our historical renewals expenditure is generally prudent and efficient. We have reviewed the specific projects that AECOM has used to justify a global adjustment to historical renewals expenditure and consider the inefficiencies identified by AECOM for the Callide Flood Review project are project specific, rather than systemic.

AECOM considered that this project was inefficient due to an unjustified total budget overrun for Phase 1 and 2 of $135,858 ($2018/19). AECOM believed that the increase in costs was primarily due to higher than budgeted Sunwater project and stakeholder management costs, as well as two additional external services. It also noted that it was not clear whether a competitive tender process was undertaken for the two external services. AECOM adjusted the project's actual costs by the budget overrun amount.

AECOM's approach of comparing the actual costs against an original budget and attributing any cost variance as an "inefficiency" is overly simplistic. This is particularly the case for the Callide Flood Review project which was not a typical non-routine project. We note:

- There was no defined scope of works at the time the original Phase 2 budget was established, given the project was in response to the IGEM recommendations and no specific scope of how the recommendations would be addressed was known.
- A number of the recommendations required Sunwater to collaborate with multiple agencies, making it difficult to determine the scope of Sunwater's work and the associated cost apportionment.
- The final approved budget for Phase 2 works did not include a contingency amount, which is not typical for a project of this scale. This occurred due to the timing of the IGEM recommendations (released in June 2014), which required the project manager to work within the available budget already established for the annuity program at that time.

Sunwater prepared a Significant Procurement Plan for the Phase 2 works, which recommended exemptions from the competitive procurement process for the engagement of an external Project Director and hydrologic and hydraulic modelling services. The exemption was applied to the external Project Director because the work was highly specialised and complex. The preferred supplier had demonstrated experience with stakeholder engagement and negotiations, and had a thorough understanding of the legislative framework regarding dams and flood planning strategies. The preferred supplier for the hydrologic and hydraulic modelling was also contracted for their specialist expertise, as they had developed the original modelling following the 2013 flood event in Callide Valley and further developed these models to consider the impacts of Tropical Cyclone Marcia in 2015. The exemption was justified based on the supplier's familiarity with the models,

their demonstrated ability to produce good quality outcomes and the risk of uncertain outcomes from other potential suppliers. Sunwater considers that these exemptions were appropriate and do not justify a reduction in costs for this project.

In relation to the budget overrun, Sunwater has sourced additional documentation on the project variations which we can provide the QCA if required. Additional costs were the result of:

- additional time spent with Banana Shire Council (BSC) and the Local Disaster Management Group (LDMG) developing and reviewing improved warning, trigger and multi-channel messaging tools, and negotiating consistent message content to ensure coordinated warnings and notifications across agencies for flood events
- additional consultancy costs in hydraulic modelling and development of flood inundation maps for community education around the flood impacts for various dam outflows
- increased project management costs (including an external project director) in the development and review of improvements implemented in accordance with the IGEM recommendations, and, in particular, ongoing review and consultation with the (then) Department of Energy and Water Supply, BSC, LDMG, the State Disaster Coordination Centre and IGEM.

Sunwater also notes that the internal project manager costed all their time to project management. In practice, this employee worked on other aspects of the project too. This resulted in the internal project management costs appearing much higher than what was originally budgeted.

In light of the above, Sunwater maintains that the budget overrun issues associated with this project should not be considered systemic. The global deduction for systemic issues should therefore be reduced to 2.9 per cent.

For the remaining three projects sampled, Sunwater has not sought to prosecute whether the issues raised by AECOM or the magnitude of the adjustments proposed are sufficiently representative to justify a global reduction to expenditure already incurred. In part, this is due to the available time to respond to these issues. Our November 2018 submission also observed inefficiencies in some of our historical renewals projects which triggered improvements to our approach to asset management and planning.

The changes we are implementing will seek to address some of the issues identified by AECOM in its review. For example, we are changing the planning cycle to a rolling 18-month program of fully scoped work (expected to be completed by June 2020). This should enable earlier procurement at a state-wide level.

4.4.2 Transitional period renewals – Adjustments for systemic issues

AECOM position

AECOM identified three themes and associated systemic issues relating to its review of transitional period renewals expenditure. AECOM found what it thought were inconsistencies in the application of replacement and refurbishment intervals, as well as inconsistencies between planned refurbishments and future replacements. AECOM also observed a lack of evidence supporting cost estimation. It could not reconcile replacement costs for some items in the asset register against the proposed project costs and some costs between years appeared inconsistent for rolling programs. AECOM made adjustments where the proposed expenditure was materially higher than the value in the asset register. Finally, AECOM noted that project funding is often separated between project development and implementation phases making the full cost of the project difficult to track.

Sunwater response

Sunwater notes that of the 36 projects reviewed, adjustments were recommended for only four projects due to what AECOM described as systemic issues. We have reviewed these projects. We accept that a lack of documentation for some projects makes the review task difficult.

We note that AECOM reduced Sunwater's proposed expenditure for the installation of new shutters at Ben Anderson Barrage (project 19BUN10) by 34 per cent because the expenditure cost claim is around $133,000 higher than the cost estimate. AECOM found that the replacement justification was prudent and documentation appropriately demonstrated efficiencies in project planning. However, because the expenditure claim in 2018/19 was higher than the cost estimate and there was no explanation of the variance, AECOM made an adjustment to the lower amount. We have investigated the issue in more depth and have provided below an explanation for the variance.

Sunwater notes that the original scope of work for the shutters at Ben Anderson Barrage (project 18BUN18) covered the cyclical refurbishment of up to 45 shutters per financial year. Works scheduled to commence in 2017/18 were delayed, however, due to unfavourable site conditions and the lack of opportunities for a shutdown to occur. Because these issues were occurring, Sunwater sought to revisit the proposed strategy and, after preliminary investigations, decided to proceed to a more detailed investigation and design review, taking into account the latest information. The purpose of this review was to improve asset performance, reduce maintenance costs and reduce reliance on shutdowns.

The investigation and design work was originally forecast to be completed in 2018/19 (under project 19BUN10). However, an opportunity to accelerate the investigation and design review arose resulting in $113,228 being incurred in 2017/18 and allocated to the original project (18BUN18).

The forecast expenditure of $386,000 included in our June 2019 update for project 19BUN10 included the investigation and design review, as well as the replacement costs for 10 shutters. The variation identified by AECOM between our forecast expenditure claim and the February 2019 cost estimate is not the result of an inaccurate forecast for the replacement works. Rather, it relates to the timing of costs associated with investigation and design work which were brought forward.

Sunwater accepts AECOM's proposed reduction in 2018/19 for this project, given the investigation and design costs were accounted for in 2017/18. However, due to the specific nature of the project and the reasons for the adjustments, we do not believe this is evidence of a systemic issue. The recommended global deduction for transitional period renewals should therefore be changed to 3.6 per cent.

4.4.3 Transitional period renewals – Project specific adjustments

Two projects, Dawson River meter replacements and the development of a recreational use storage management plan at Chinchilla Weir, were adjusted due to project specific issues. Sunwater accepts the QCA's draft decision to adjust these projects.

4.4.4 Transitional period renewals – Thuraggi Channel adjustment

In early August 2019, Sunwater advised the QCA that repairs being undertaken in the Thuraggi Channel in the St George bulk water supply scheme were misclassified in the Sunwater Financial Model as Dam Improvement Program expenditure. As a result, our June 2019 update did not

include the forecast 2019/20 costs for this project in the annuity funded renewals expenditure forecasts.[64]

The QCA did not make an adjustment for this misclassification in its draft report. We request that this be rectified for the final decision.

4.4.5 Identification of errors in AECOM's calculations

Sunwater has completed a reconciliation of the proposed project costs used by AECOM in its assessment against information supplied by us in our June 2019 update (converted to $2018/19 using AECOM's conversion factors). We have found several errors in the transitional years, including inconsistencies between the summary tables in Chapter 6 of AECOM's report and the assessments contained in Appendix B. We have outlined these errors in Appendix C of this submission. While these errors have no impact on the recommended global deduction for transitional years, we request that the QCA review and correct these errors prior to making its final decision.

4.5 Historical non-routine corrective maintenance expenditure

AECOM reviewed four flood damage projects. Of these, one project was removed as the insurance claim was not yet resolved and a 6.3 per cent adjustment to one project was recommended due to a budget overrun. AECOM cited poor scoping and budgeting, and the use of exemptions from competitive procurement tender processes as the reason for the overrun. AECOM suggested the 6.3 per cent adjustment could be extrapolated to all flood damage projects.

The QCA accepted the recovery of non-routine corrective maintenance costs via the annuity. However, it decided to exclude flood damage costs from the annuity calculation until any associated insurance claim is resolved. The QCA did not make any adjustments in its draft decision to historical non-routine corrective maintenance expenditure (for those costs not subject to an unresolved insurance claim).

4.5.1 Sunwater response

Sunwater notes that the QCA's pricing model does not include the project specific adjustment recommended by AECOM for the emergency works at Moolabah Weir. The QCA has since confirmed that this adjustment will be made in its final report. The cost of this project was adjusted by 6.3 per cent, in part because of improper scoping in relation to concrete cutting. However, our project records show the 40 per cent increase in costs attributed to additional concrete and associated pumping was driven by larger than expected voids. In our view, this was not an issue of poor scoping, but an additional increase to the budget which could not have been foreseen at the time of preparing the scope. The AECOM-recommended adjustment for this project may therefore be overstated.

We note the QCA's draft recommendation to accept the recovery of non-routine corrective maintenance expenditure via the annuity and to exclude flood damage costs from the annuity calculation until any insurance claim is resolved.

Since the release of the QCA's Draft Report, agreement between Sunwater and other relevant parties has been reached in relation to the 2011 insurance claim for Boondooma Dam and the 2013 insurance claim. We will provide the insurance proceeds allocations, on a commercial-in-

[64] The June 2019 update also did not include these costs as Dam Improvement Program expenditure.

confidence basis, to the QCA separately. Sunwater expects the QCA to reflect the net costs in its final decision on historical non-routine corrective maintenance expenditure.

4.5.2 Identification of errors in AECOM's calculations

As highlighted above, AECOM has suggested that the 6.3 per cent deduction for the Moolabah Weir project could be applied to all flood damage projects. We support the QCA's draft decision to not make this global deduction. In the event the QCA reverses its decision and applies the adjustment, it is important to note the figure was calculated by dividing the AECOM-proposed adjustment for the Moolabah Weir project by Sunwater's expenditure claim for this project. The systemic deduction, on the other hand, should be calculated by dividing the total AECOM-proposed adjustment for systemic issues by Sunwater's expenditure claim for all flood damage projects reviewed, consistent with the approach adopted for renewals projects. The resulting percentage is 2.1 per cent.

4.6 Historical non-routine operational expenditure

We support the QCA's draft decision to include non-routine operational expenditure in the annuity and to accept Sunwater's proposed expenditure.

4.7 Renewals expenditure in the price path period

The QCA accepted the reductions to renewals expenditure within the price path period recommended by AECOM.

AECOM reviewed 26 projects. It found one of these projects to include similar systemic issues identified in its review of projects in the transitional period and recommended a deduction of 1.6 per cent be applied across all renewals expenditure in the price path period. Adjustments were also recommended for three projects due to project specific issues (totalling $405,000 in $2018/19) and expenditure for two sampled projects was completely removed based on AECOM's assumptions regarding the timing of the replacement.

The most significant adjustment related to recommendations from AECOM's annuities review, which transfers approximately $6.2 million ($2018/19) out of the price path period for renewals activities that were not supported by projected asset condition using Sunwater's asset strategies.

4.7.1 Sunwater response

Sunwater notes that of the 26 projects that AECOM assessed, 20 were deemed prudent and efficient. Only one project was adjusted by AECOM due to what it considered were systemic issues and three projects were adjusted for project specific issues. We accept the QCA's draft decision to apply these reductions to forecast costs in the price path period.

Sunwater has identified a minor error in AECOM's figures which we would like the QCA to investigate and correct prior to making its final decision (see Appendix D).

We note that renewals expenditure for two projects were completely removed out of the price path period based on AECOM's changes to assumed asset lives, and additional adjustments were made for renewals activities that were not supported by projected asset condition using our asset strategies. We have responded to AECOM's annuities adjustment in the next section.

4.8 Renewals expenditure beyond the price path period

The QCA's draft decision notes that projects beyond the price path period exhibit some level of uncertainty. With the assistance of AECOM, the QCA assessed the robustness of Sunwater's forecast methodology and cost estimations on the basis that detailed project documentation so far out from undertaking the works is likely to be limited.

The QCA accepted AECOM's recommendation to reduce renewals expenditure for four projects sampled by $2.67 million ($2018/19) due to high cost estimates and to apply a $959,000 ($2018/19) adjustment for a project specific issue. It also accepted AECOM's recommendation to apply a global deduction for systemic issues of 6.4 per cent to all other forecast renewals expenditure in the beyond the price path period.

The most significant adjustment related to recommendations from AECOM's annuities review which transfers approximately $176 million in expenditure out of the 2024/25 to 2052/53 period.

4.8.1 Annuities review and the timing of expenditure

AECOM position

As noted in Section 4.3.2, AECOM was critical of Sunwater's approach to estimating the timing of replacements using a standardised decay curve for all assets. AECOM formed a view that the life expectations in use may not reflect reality.[65]

Using asset condition data, capitalisation dates, expected useful life and Sunwater's asset decay curve, AECOM modelled expected asset condition using Sunwater's lifecycle planning rules. AECOM then projected the asset condition using AECOM's own proprietary asset curve. Using this analysis, it formed the view that the weighted average condition of assets under the Sunwater approach was higher than the target adequate range using AECOM's model.

AECOM then applied a 10 per cent life extension to Sunwater's expected useful life and examined the impact of delayed renewal works. Asset extension was only applied in the price path period where the renewal projects were not supported by projected asset condition. Separately, AECOM projected asset condition using Sunwater's decay curve and applied Sunwater's lifecycle planning rules to the asset condition in each year. AECOM's extrapolation found a variance between its values and Sunwater's renewals program.

AECOM noted that it needed to make a number of assumptions when undertaking this exercise. There were also several limitations. However, using this analysis and other sensitivities, it formed the view that adopting Sunwater's renewal strategies result in our assets being maintained at too high a level.

As a result, AECOM applied a 10 per cent increase in life expectancy, reflecting the impact of applying a higher tolerance risk of failure. AECOM has asked Sunwater to initiate a comprehensive review of failure distribution for our critical assets and use that to develop our own evidence-based deterioration curves. AECOM also recommended Sunwater provide feedback on whether its recommendations would result in an unacceptable increase in service failures.

Sunwater response

We note that AECOM's analysis includes use of its own proprietary curve and involves a comprehensive and complex assessment using a range of inputs and assumptions. We have not

[65] AECOM (2019), *Rural Irrigation Capital Expenditure Review – Sunwater (redacted)*, August 2019, p87.

had time to provide a comprehensive assessment of AECOM's modelling. However, we note that customers bear the risk of higher prices in the subsequent price path period should the analysis be incorrect, potentially resulting in intergenerational equity issues.

Our response to AECOM's assessment of decay curves can be found at Section 4.3.2. Derivation and maintenance of multiple decay curves for each asset class is not a universal panacea, is time consuming and costly. Where industry-based data is used, they are unlikely to properly account for local characteristics.

Sunwater expects to continue to use our existing decay curve as an indication for a renewals profile, with condition and performance data used to inform and prioritise the works program.

AECOM itself has acknowledged that a consequence of its recommended renewals profile is upward pressure on operating and maintenance expenditure. However, rather than take this into account, AECOM recommended reductions to our forecast operating costs. This does not appear to be a prudent approach given its comments on the implications of the application of a different decay curve and extension of asset lives.

4.8.2 Sampled projects – Systemic issues and cost estimation

Of the 46 projects that AECOM assessed, four projects were adjusted for high cost estimates. AECOM considered these projects to be representative of a systemic issue and recommended a global deduction be applied. Sunwater accepts AECOM's assessment for three of the projects, but we do not accept its findings in relation to the Isis system concrete channel lining refurbishment program.

The Isis system concrete channel lining refurbishment program is forecast to be undertaken on a five-yearly cycle, with the forecast costs for each cycle separated over two stages. AECOM evaluated the forecast costs for project 24BIA20 (stage one), but did not assess the stage two costs (project 0000073055).

In reaching its conclusion that the forecast costs for project 24BIA20 were inefficient, AECOM made two fundamental errors:

- AECOM incorrectly calculated the five-yearly allocation amount. AECOM claims that the five-yearly allocation should be $197,214 ($2018/19). AECOM calculated this by dividing the asset register replacement value for concrete channel linings ($11.8 million in $2018/19) by 60. However, this calculation results in a **yearly** allocation amount. A five-yearly allocation amount using AECOM's figures is approximately $983,000 (or $491,667 per stage). Our forecast costs are less than these amounts and are therefore efficient.
- AECOM incorrectly concluded that Sunwater's total valuation of the forecast refurbishment program is $25.6 million and that our forecast costs must include unlined earth channels. It appears AECOM calculated this valuation by multiplying the average refurbishment costs of $430,000 ($2018/19) by 60, failing to consider the fact that the forecast costs were a five-yearly allocation amount split across two stages. When establishing the forward program, we used a total valuation of $9.4 million,[66] consistent with the asset register replacement value. Unlined earth channels were not included in our forecast costs. We note that for other projects reviewed, AECOM has determined that a total valuation close to the asset register replacement value is reasonable and no adjustments have been made.

[66] Prior to the re-allocation of non-direct costs in the Sunwater Financial Model and escalation.

AECOM also observed fluctuations in expenditure across the five-yearly cycle of refurbishments and could not determine the reasons for these fluctuations. These fluctuations are the result of the application of Sunwater's cost allocation methodology (CAM), which AECOM and the QCA both accepted. After calculating forecast costs in the Works Management System, Sunwater removes the project's non-direct costs and re-applies them in the Sunwater Financial Model. This model uses the forecast non-direct cost pools for the relevant year and allocates them in accordance with the CAM. Non-direct costs vary between years due to the variable nature of the CAM. As labour is the main cost driver, any changes in forecast labour in the Sunwater Financial Model for the regulated and unregulated businesses (eg due to expected new asset developments) will affect the non-direct rates derived and subsequently applied to each individual forecast renewals project.

In light of the above, Sunwater believes this project should be deemed prudent and efficient. The adjustment for this project should therefore be removed and the global deduction for systemic issues should be changed to 3.0 per cent. The QCA should make these adjustments in its final decision.

We also note that, in addition to the above errors which found the project to be inefficient, AECOM used an incorrect adjustment amount to calculate the accepted cost and systemic deduction. Appendix B incorrectly assesses forecast costs for project 24BIA20 in 2053/54. As this is outside of the planning period, the costs should not be taken into account. It appears AECOM recognised this error and attempted to rectify it in Figure 23 of its report. The Sunwater claim in this table is $2.19 million ($2018/19) which reflects the total forecast costs for project 24BIA20 in 2028/29, 2033/34, 2038/39, 2043/44 and 2048/49. However, AECOM did not make a similar change to the adjustment amount. Because of this error, the AECOM-accepted amount for this project is understated by approximately $197,000 and the systemic deduction is overstated by 0.5 per cent.

4.8.3 Sampled projects – Project specific adjustment

One project, Dawson River meter replacements, was adjusted due to a project specific issue. Sunwater accepts the QCA's draft decision to adjust this project. However, we believe AECOM's adjustment amount has been calculated incorrectly and the correct amount should be $942,000. This error is outlined in Appendix D.

4.8.4 Identification of errors in AECOM's calculation

Sunwater has undertaken a review of the calculations underpinning AECOM's recommended deductions and project specific adjustments for the beyond the price path period. We have found several errors, including:

- inconsistencies between the summary tables in Chapter 6 of AECOM's capex report and information we supplied to AECOM (once converted to $2018/19 using AECOM's conversion factors)
- inconsistencies between the summary tables in Chapter 6 of AECOM's capex report and the assessments in Appendix B of the report
- errors in AECOM's assessment of the Isis system concrete channel lining refurbishment program, as discussed above.

We have outlined these errors in Appendix D of this submission. We request the QCA to investigate and correct these errors prior to making its final decision.

4.9 Removal of non-routine recreational facility projects

We note the QCA's draft decision to remove recreational facility costs from forecast renewals expenditure.

4.10 Proposed Dam Improvement Program capital expenditure

We support the QCA's draft decision to accept Sunwater's revised estimates of dam improvement capital expenditure following assessment by AECOM.

5. Rate of return

5.1 Our positions at a glance

Rate of return		
WACC	✓	Sunwater notes the QCA's draft decision in relation to the WACC, including its position that the 10-year risk free rate will be updated in the final report.

5.2 QCA draft decision

The QCA's draft decision in relation to the WACC is shown in Table 16. The QCA noted that the 10-year risk free rate would be updated in the final report.

Table 16: Draft decision on WACC

Parameter	QCA Draft Report
20-day averaging period (end date)	28 June 2019
Risk free rate	1.40%
Market risk premium	6.5%
Asset beta	0.40
Equity beta	0.755
Cost of equity	6.30%
Credit rating	BBB
Debt margin (incl. refinancing)	2.20%
Cost of debt	3.70%
Capital structure	60%
Gamma	0.484
Nominal post-tax WACC	4.74%

5.3 Sunwater response

Sunwater notes the QCA's draft recommendation on WACC does not have a material impact on Sunwater, given we are not expecting to earn a significant return on capital on the DIP RAB until the price path commencing in 2024/25. As a result, Sunwater is not seeking any changes to the QCA's proposed WACC for the upcoming price path period.

However, as a general observation, the draft decision WACC of 4.74 per cent is considerably lower than the WACC of 7.49 per cent adopted in the QCA's May 2012 review of Sunwater's irrigation prices, largely reflecting significant falls in the risk free rate since 2012. The risk free rate has continued to fall since the QCA's draft decision, with the yield on 10-year Australian Government bonds falling to a low of 0.86 per cent on 7 October 2019.

Sunwater notes that many other Australian economic regulators have moved away from using a point-in-time estimate of the risk free rate for formulating the WACC. The QCA may wish to consider the merits of similarly adjusting its WACC methodology in order to avoid the volatility

between price paths, which is highlighted by the difference in WACCs between the QCA's 2012 and 2024 reviews of irrigation prices.

In addition, despite ongoing reductions in the risk free rate, the QCA has also recently reduced its estimate of the market risk premium from 7.0 per cent to 6.5 per cent.[67] The QCA may wish to investigate whether a decision to reduce the market risk premium is consistent with current market evidence. There may be arguments suggesting that the risk free rate and market risk premium are inversely correlated and that the cost of equity (being the sum of the risk free rate and market risk premium) is relatively more stable than its individual components.

[67] The QCA adopted a market risk premium of 7.0 per cent in its March 2018 review of Seqwater's bulk water prices.

6. Revenue requirement

6.1 Our positions at a glance

Revenue requirement		
Annuity approach	✓	Sunwater accepts the QCA's draft decision to maintain a renewals annuity approach.
Opening annuity balances	✓	We accept the QCA's draft decision.
Planning period	✓	Sunwater supports the QCA's draft decision to apply a 30-year planning period.
Calculating the renewals annuity	✓	Sunwater supports the QCA's draft decision. We note the WACC and inflation rate may change in the final decision.
Calculating the Dam Improvement Program allowance	✓	We accept the QCA's draft decision to adopt a RAB-based approach and note its decision in relation to the return on and of capital and recognition of capital expenditure on an as-commissioned basis.
Working capital allowance	✓	Sunwater supports the QCA's draft decision to apply a working capital allowance of zero.
Revenue offsets	🔍	Sunwater has updated our forecast revenue offsets for the most recent available information.
Tax allowance	✓	Sunwater notes the QCA's draft decision to apply a tax allowance of zero.

6.2 Renewals expenditure allowance

6.2.1 QCA draft decision

Annuity approach

The QCA accepted Sunwater's proposal to adopt a renewals annuity approach. However, in doing so, it highlighted potential issues with our application of this approach including:

- difficulties in accurately forecasting expenditure over a 20-year or 30-year planning period
- intergenerational equity, given that a 20-year or 30-year planning period does not cover the longest life assets in our asset base.

The QCA further noted that the asset management plans and Network Service Plans generally do not provide enough information to facilitate customer scrutiny and input on longer-term asset plans and renewals projects.

RAB-based approach

The QCA considered there are benefits of transitioning to a RAB-based approach, including improving transparency for customers and greater alignment with Sunwater's planning focus for Network Service Plans. It also highlighted that if such an approach was adopted, an opening RAB would need to be established and careful consideration would need to be given to ensuring Sunwater has sufficient funds to adequately maintain and replace infrastructure (and incentives to do so cost effectively).

The QCA recommended that Sunwater should work with our customers and the Queensland Government to move to a RAB-based approach for future price reviews.

6.2.2 Sunwater response

Sunwater accepts the QCA's draft decision to use a renewals annuity approach in the next price path period consistent with prior reviews.

We note the QCA's support for considering the costs and benefits of moving toward a RAB-based approach. In our November 2018 submission, we indicated that the RAB option should remain open for future reviews, if the transition can be managed in a way that preserves the cashflows that Sunwater requires to maintain our financial viability and service delivery. The QCA similarly noted benefits in transitioning toward a RAB-based approach, recognising that that there are a number of implications that would need to be carefully considered before a RAB-based approach was adopted.

Given the complexity of the issues involved and the interaction with government policy, investigations into the possibility of moving to a RAB-based approach in the future require involvement from a variety of stakeholders, including the QCA. It would be inefficient for Sunwater and other stakeholders to invest resources exploring a new approach without commitment and support from the Queensland Government and the QCA.

Sunwater has been in close consultation with customers regarding the format and content of Network Service Plans. Where some customers have requested further information, we have provided it. The QCA notes that, in some circumstances, customers were interested in seeking further detail on planned renewals projects and these were provided. However, it does not naturally follow that all customers in all schemes are interested in Sunwater reporting at this level of detail for every scheme, every year. In fact, our general response from customers was to reduce the amount of information provided and shorten the Network Service Plans.

We will continue to work with customers moving forward on striking the right balance in terms of the project-related and cost information we provide them.

6.3 Opening annuity balances

6.3.1 Sunwater proposal

We proposed the following adjustments to the 2020/21 opening annuity balances for each scheme:

- adding back flood damage expenses which were removed by the QCA in the 2012 review due to outstanding insurance claims
- adjusting for differences between forecast and actual 2011/12 renewals expenditure
- adjusting for differences between reported 2011/12 annuity income and the prices that applied in 2011/12
- adjusting for 2011/12 Intersafe project management costs that were missed in original reporting
- accounting for differences in financing/interest costs resulting from the above adjustments.

6.3.2 QCA draft decision

Opening 2012/13 annuity balances

The QCA made the following adjustments to the previously established 2011/12 opening annuity balances for each scheme to develop revised 2012/13 opening annuity balances:

- included prudent and efficient 2011/12 flood renewals costs, adjusted for insurance claim recoveries
- adjusted for differences between forecast 2011/12 renewals expenditure and prudent and efficient 2011/12 renewals costs.

The QCA did not adjust for the 2011/12 annuity income difference or Intersafe project management costs as these were already incorporated in its 2012 review modelling.

Roll forward

The QCA rolled forward each scheme's revised opening 2012/13 annuity balance each year by:

- adding the renewals annuity allowance:
  - using the allowance from the 2012 review for 2012/13 to 2016/17
  - using the QCA-approved 2016/17 allowance, increased by forecast inflation of 2.5 per cent for each year, for 2017/18 to 2019/20
- subtracting the QCA's recommended prudent and efficient renewals costs
- adjusting for interest each year.

6.3.3 Sunwater response

Opening 2012/13 annuity balances

Sunwater accepts the QCA's draft decision. As noted in Section 4.5.1, agreement between Sunwater and other relevant parties in relation to the 2011 insurance claim for Boondooma Dam has been reached. We expect the QCA to reflect the net costs in its final decision.

Roll forward

Sunwater supports the approach used by the QCA to roll forward the opening annuity balances for each scheme. We have provided the QCA with 2018/19 actual renewals expenditure and request the QCA to update the annuity balances accordingly.

As noted in Section 4.5.1, agreement between Sunwater and other relevant parties in relation to the 2013 insurance claim has been reached. We expect the QCA to reflect the net costs in its final decision.

6.4 Planning period

6.4.1 QCA draft decision

The QCA assessed the impact on the renewals annuity allowance of Sunwater's proposal to move from a 20-year to a 30-year planning period. It found that the total renewals annuity allowance is:

- 1 per cent lower under a 30-year planning period for bulk water supply schemes

- 24 per cent higher under a 30-year planning period for distribution systems. However, the QCA noted the allowance was lower than the level recommended by the QCA in the 2012 review.

While the QCA expressed a preference for a longer planning period than 30 years, it considered its concerns with accurately forecasting expenditure would be exacerbated. The QCA therefore accepted Sunwater's proposal to apply a rolling annuity approach with a 30-year planning period.

6.4.2 Sunwater response

We accept the QCA's draft decision to apply a 30-year planning period. However, we note that the QCA's decision to extend the asset lives of a large portion of Sunwater's assets effectively means that a large portion of renewals expenditure is moved beyond the 30-year planning period. Chapter 4 covers our response in relation to the accuracy of our long-term forecasts.

6.5 Calculating the renewals annuity

6.5.1 QCA draft decision

The QCA accepted Sunwater's proposal to:

- apply a discount rate equivalent to the real post-tax WACC for calculating the annuity
- apply a nominal post-tax WACC to calculate the interest rate applied to positive and negative annuity balances
- index the renewals annuity using an assumed inflation rate.

However, the QCA updated the post-tax WACC and inflation rate in its draft decision.

6.5.2 Sunwater response

Sunwater supports the QCA's draft decision. We note the WACC and inflation rate may be updated in the final decision.

6.6 Calculating the Dam Improvement Program allowance

6.6.1 QCA draft decision

RAB-based approach

The QCA accepted Sunwater's proposal to use a RAB-based approach for calculating the Dam Improvement Program allowance. It considered that the RAB-based approach should only recover the return of and on the initial Dam Improvement Program capital expenditure over the useful life of the asset. Progressive capital expenditure outlays to maintain the serviceability of the upgraded dam would be included in the renewals annuity. This requires Sunwater to maintain separate accounts.

As commissioned

Sunwater proposed that capital expenditure should be recognised in the RAB in the year in which it is incurred. However, the QCA determined that it should be recognised from the year in which a project is commissioned, on the basis that this is the point from which the capital expenditure starts

delivering a service and providing benefits. The QCA stated that the as-incurred approach would bring forward cost recovery and impact on customer's prices prior to the benefit being delivered.

Return on and of capital

In our November 2018 submission, Sunwater proposed a return on capital only. We considered a depreciation allowance was not required as dams are currently maintained in perpetuity via the renewals annuity. In its Draft Report, the QCA decided to apply both a return on capital (using a nominal post-tax WACC that differed from our proposal) and return of capital (using an asset life of 150 years).

6.6.2 Sunwater response

RAB-based approach

Sunwater supports the QCA's draft decision to use a RAB-based approach for Dam Improvement Program expenditure as per our proposal. We agree that progressive capital expenditure outlays would be included in the renewals annuity and separate accounts will need to be maintained. Sunwater will establish the appropriate systems, processes and procedures prior to the commencement of the next price path period.

We request that the QCA's final report specifically refers to the RAB for the dam safety capital expenditure as the "dam safety RAB" to avoid potential confusion with other costs covered by the annuity or a future broad-based RAB.

Recognition of capital expenditure

Sunwater notes the QCA's draft decision to recognise capital expenditure as commissioned (rather than as incurred). Regarding our concerns about the compensation for financial hardship in constructing assets, we note the QCA's commitment to an approach which ensures the as-commissioned recognition would be net present value neutral over the life of the asset compared to an as-incurred methodology.

Return on and of capital

We note the QCA's draft decision to depart from our approach to calculating asset returns.

6.7 Working capital allowance

6.7.1 QCA draft decision and Sunwater response

We note the QCA's draft decision to apply a working capital allowance of zero, consistent with our November 2018 proposal.

6.8 Revenue offsets

6.8.1 QCA draft decision

The QCA did not review Sunwater's proposed revenue offsets as they are immaterial. The revenue offsets proposed by Sunwater were deducted from the scheme total costs.

6.8.2 Sunwater response

Sunwater has updated the revenue offset amounts and will provide them to the QCA separately. A summary, at the total level, is shown in Table 17.

Table 17: Updated indicative revenue offsets (million, $nominal)

	2020/21	2021/22	2022/23	2023/24
Access charges[1]	(0.75)	(0.77)	(0.78)	(0.80)
Drainage diversion charges	(0.06)	(0.06)	(0.06)	(0.07)
Drainage fees	(1.28)	(1.31)	(1.34)	(1.37)
Other fees and charges	(0.04)	(0.04)	(0.05)	(0.05)
Rent received	-	-	-	-
Land leases	(0.05)	(0.05)	(0.05)	(0.05)
Termination fees	-	-	-	-
Total	**(2.17)**	**(2.23)**	**(2.28)**	**(2.34)**

1. Mareeba-Dimbulah scheme only. Revenue offsets for access charges will be higher if an access charge is implemented in other schemes. Refer to Section 8.4.

6.9 Tax allowance

6.9.1 QCA draft decision

The QCA notes that the referral notice requires the QCA to make pricing recommendations that do not consider Sunwater's existing asset base and, on that basis, renewals are treated as operational with no tax liability accruing.

In respect of dam safety upgrade capital expenditure, where the QCA has been requested to consider an appropriate allowance for tax, the QCA has decided to depart from our preferred approach and to apply a post-tax nominal WACC with a tax allowance of zero. This is based on the QCA's view that the allowance for tax should be based on the benchmark tax liabilities of the regulated business. Given that for all new capital expenditure Sunwater elects to fully deduct all capital costs for tax purposes in the year in which the capital cost is incurred, the QCA has assumed a zero tax allowance.

6.9.2 Sunwater response

We note the QCA's draft decision regarding tax depreciation for Sunwater's existing asset base is consistent with the referral notice.

With regard to future capital expenditure for dam safety, it is common regulatory practice to adopt shorter asset lives for taxation purposes. It is more unusual, however, to have such a large discrepancy between regulatory asset lives (150 years) and taxation lives (one year). The above arrangement creates quite extreme timing differences between the revenue allowances for regulatory depreciation and cost deductions for tax depreciation.

Existing customers benefit from the immediate tax deductibility of capital expenditure, thereby creating notional tax losses which are carried forward for a period of time. Future customers will pay more in that they will have no tax shield through depreciation once carry forward losses are exhausted.

To avoid the inter-generational impacts, the QCA may wish to consider whether the assumption of a zero asset base increasing by new capital expenditure over a period is in fact representative of a benchmark business or benchmark tax liabilities. Most benchmark businesses will in fact have a mixture of tax liabilities as well as generating income from assets whose tax liabilities have been exhausted. It is therefore far more likely that a benchmark tax allowance would be something other than zero.

Nevertheless, we note the QCA's draft decision and the potential impact on future prices as a result of an assumption of a zero tax allowance.

7. Forecast entitlement and usage volumes

7.1 Our positions at a glance

Forecast entitlement and usage volumes		
Water access entitlements	✓	Sunwater accepts the QCA's draft decision.
Usage volumes	✗	Sunwater supports the application of a 20-year simple average to determine volumetric prices in principle. However, there are several issues with the extended historical dataset used by the QCA. We request the QCA use a 17-year average (covering the period 2002/03 to 2018/19) in its final decision.

7.2 Water access entitlements

7.2.1 Sunwater proposal

Sunwater used WAE data sourced from our system in May 2018 to establish forecast entitlements for the price path period.[68] We made adjustments to the allocation of certain WAEs for the purposes of cost allocation for pricing, consistent with the 2012 review. We also reflected changes to free water allocation arrangements in the Barker Barambah and Burdekin Haughton bulk water supply schemes in our regulatory model. These adjustments were outlined in Appendix I of our November 2018 submission.

7.2.2 QCA draft decision

The QCA reconciled our proposed WAE forecasts against the 2012 review forecasts and information published on the Queensland Government's website. It noted our treatment of free water in the Burdekin Haughton bulk water supply scheme was consistent with the referral notice and considered that our proposed adjustments to WAEs resulted in appropriate forecasts for deriving fixed prices.

7.2.3 Sunwater response

We accept the QCA's draft decision.

7.3 Usage volumes

7.3.1 Sunwater proposal

In our November 2018 submission, we considered that a 'typical' water usage year for Sunwater does not exist due to variability in climatic conditions over time. We recommended a 15-year simple average to determine volumetric charges. We updated this in June 2019 to reflect an

[68] The November 2018 submission erroneously indicated that the entitlement information was from 2016/17. Sunwater advised the QCA of this in our response to Request for Information 18.

additional year of available data (2017/18) to produce a 16-year average, covering the period 2002/03 to 2017/18.

7.3.2 QCA draft decision

The QCA considered that the assumed level of water use should be representative of normally occurring conditions. It extended the averaging period to 20 years, noting this covers a range of conditions and is consistent with the IPART's approach for deriving usage to calculate variable tariffs for WaterNSW.

7.3.3 Sunwater response

Sunwater supports the position put forward by the QCA to apply a 20-year simple average to determine volumetric prices in principle. However, we have identified several issues with the accuracy of the historical dataset the QCA has used to extend our proposed 16-year average to a 20-year average.[69]

Our main concern is that the extended historical datasets used by the QCA do not include Sunwater allocations, including distribution losses. The QCA has used an average of distribution loss deliveries over the 2002/03 to 2017/18 period (where this data was provided as part of the request for information process) or an alternative figure to estimate the distribution loss deliveries for the relevant year. This approach fails to consider the correlation between water deliveries and distribution loss deliveries in any given year, and produces outcomes that are unrepresentative of actual year-on-year distribution losses in those schemes. As a result, the QCA's 20-year average distorts 16 years of accurate usage data.

Other issues include:

- The QCA has applied an inconsistent approach to water harvesting. Water harvesting has been excluded in the 2002/03 to 2017/18 data, but the QCA has included it in some (but not all) affected schemes in 1999/00. The reason for this is not clear in the model supplied or the QCA's Draft Report.
- In the Burdekin Haughton distribution system, the QCA has:
  - relied on data from the Burdekin Haughton water supply scheme 2002 review for 1999/00, which is inconsistent with its approach for the Burdekin Haughton water supply scheme data used for that year. The water supply scheme figures (which include the distribution system) are based on water statistics published by the Department of Natural Resources. This has potentially led to a mismatch between the distribution system only data and the distribution data included in the water supply scheme figure. The reason for the difference in approach was not explained in the model supplied or the QCA's Draft Report.
  - excluded water deliveries associated with the Giru Benefited Area and groundwater in 2000/01. This is inconsistent with the approach adopted in the 2002/03 to 2017/18 data.
  - calculated its own estimate of water usage in 2001/02, by taking distribution system water deliveries in 2002/03 as a proportion of water supply scheme usage in 2002/03 and multiplying this by the water supply scheme usage in 2001/02. The rationale supporting this changed approach was not provided in the model supplied or the QCA's Draft Report.
- The QCA has applied the whole of scheme data to the Eton distribution system for 1999/00 to 2000/01. This is inconsistent with the approach adopted in the 2002/03 to 2017/18 data, which uses data related to the distribution system (inclusive of distribution losses) only.

[69] Sunwater has not analysed the 1998/99 dataset, given 2018/19 data is now available.

- In the Lower Mary River water supply scheme, the QCA has made a number of changes to its methodology without providing the supporting rationale in the model supplied or its Draft Report. It has:
  - calculated a 20-year average, despite not having data for 2001/02. A 19-year average should have been calculated.
  - incorrectly applied the regulated streams data in 2000/01 to the Lower Mary River distribution system, instead of the channel system data.
  - excluded water deliveries associated with the urban and industrial customer segments in the 1999/00 and 2000/01 Lower Mary River water supply scheme data. This is inconsistent with the approach taken in the 2002/03 to 2017/18 data.
- In the Mareeba-Dimbulah distribution system, the QCA has calculated its own estimate of water usage in 2001/02. It has taken distribution system water deliveries in 2002/03 as a proportion of water supply scheme usage in 2002/03 and multiplied this by the water supply scheme usage in 2001/02. In its Draft Report, the QCA does not explain why it did not use available annual report data.
- In the Mareeba-Dimbulah water supply scheme, the QCA has excluded water deliveries associated with the industrial customer segment in 1999/00 and 2000/01. The reason for this has not been documented, however, it is possibly due to an incorrect assumption that the water deliveries relate solely to the Barron Falls hydro facility. If so, Sunwater believes it merits further examination to take into account the 135 ML of nominal allocations assigned to the industrial customer segment in these years. Any water deliveries associated with these allocations would also form part of the industrial total.
- The QCA has not included the Blackwater Pipeline in its 1999/00 data for the Nogoa Mackenzie water supply scheme. This is inconsistent with the approach adopted for the 2002/03 to 2017/18 data. The supporting rationale for this change in approach is not included in the model supplied or the QCA's Draft Report.
- In the St George water supply scheme, the QCA has excluded water deliveries associated with the urban customer segment in 1999/00 and 2000/01. This is inconsistent with the approach taken for the 2002/03 to 2017/18 data. The reason for this approach is not clear.

Given the extent of issues identified and the level of estimation undertaken by the QCA to substitute for actual data, Sunwater is concerned that the adjusted 20-year average is not sufficiently robust to be used to calculate volumetric prices, compared to the available 17-year dataset. Using the adjusted 20-year dataset would introduce a risk that Sunwater may not fully recover the share of efficient costs the QCA has allocated to volumetric prices. Consequently, we request that the QCA adopt a 17-year average, based on the period 2002/03 to 2018/19. We believe that this is a sufficiently long enough period to cover a range of climatic conditions and changes in cropping (eg Dalbeg in the Burdekin Haughton distribution system has largely replaced sugar cane with sandalwood plantations, the area of cotton has reduced in Emerald and there has been a move to horticultural crops such as bananas, nut trees, grapes and avocados in the Bundaberg and Mareeba-Dimbulah schemes). The adoption of the 17-year average for this price path does not prevent the QCA from considering a 20-year average in future irrigation price reviews when a more robust dataset is available.

Using an average based on a single, consistent and publicly available data source is also more consistent with the referral notice (section C(1.4)b), that the QCA should have regard to:[70]

> *Ensuring, where possible, that revenue and pricing outcomes are both simple and transparent for customers.*

A 17-year average, based on a consistent dataset that is maintained by Sunwater as part of our business-as-usual operations (at no additional cost to customers) and is available annually via the Annual Report and Network Service Plans, is a simpler and more transparent outcome than the 20-year average proposed by the QCA.

As illustrated below, Sunwater's 17-year average results in changes of ± 0.1 to 7.0 per cent compared to the QCA's proposed 20-year average. Twenty service contracts changed by between ± 0.1 to 2.5 per cent, six service contracts changed by between ± 2.9 to 5.0 per cent, and Upper Condamine average usage is 7 per cent lower than that proposed by the QCA.

Given the differences in 20 of the 27 service contracts are marginal, the data quality significantly higher, and the simplicity and transparency of data access vastly better, we consider that a 17-year average for the 2021–24 price period is a more prudent approach, with a view to extending the averaging period to 20 years as data becomes available. We also note the QCA has the ability under the referral notice to adjust volumetric prices directly, if it is concerned about price impacts.

Table 18: Updated water usage assumptions (as a percentage of 2018/19 WAEs)[1]

Scheme	QCA draft decision	Sunwater proposal	Difference (absolute)
Barker Barambah	42%	38%	4.0%
Bowen Broken Rivers	37%	39%	2.2%
Boyne River and Tarong	56%	52%	3.3%
Bundaberg bulk	45%	46%	1.0%
Bundaberg distribution	46%	48%	1.9%
Burdekin Haughton bulk	55%	55%	0.5%
Burdekin Haughton distribution	64%	65%	0.9%
Callide Valley	61%	61%	0.5%
Chinchilla Weir	56%	56%	0.1%
Cunnamulla	59%	62%	3.1%
Dawson Valley bulk	60%	61%	0.8%
Eton bulk	40%	40%	1.0%
Eton distribution	41%	40%	1.0%
Lower Fitzroy	66%	66%	0.5%
Lower Mary River bulk	28%	27%	1.0%
Lower Mary River distribution	29%	30%	0.4%
Macintyre Brook	62%	62%	0.6%
Maranoa River	3%	3%	0.1%
Mareeba-Dimbulah bulk	63%	65%	1.1%

[70] Treasurer and Minister for Aboriginal and Torres Strait Islander Partnerships (2018), *Referral and Direction Notice,* 29 October 2018, https://www.qca.org.au/wp-content/uploads/2019/05/34157_2018-10-29-DP-Letter-to-QCA-with-referral-notice-003.pdf

Scheme	QCA draft decision	Sunwater proposal	Difference (absolute)
Mareeba-Dimbulah distribution	63%	65%	2.3%
Nogoa Mackenzie bulk	73%	68%	5.0%
Pioneer River	33%	33%	0.3%
Proserpine River	40%	43%	2.4%
St George bulk	87%	86%	0.8%
Three Moon Creek	42%	39%	2.9%
Upper Burnett	58%	53%	5.0%
Upper Condamine	48%	41%	7.0%

1. Figures are rounded.

8. Pricing framework issues

8.1 Our positions at a glance

Pricing framework issues		
Tariff structure	✓	Sunwater supports the QCA's draft decision to apply a two-part tariff structure.
Distribution losses	🔍	Sunwater accepts the QCA's draft decision in principle, however, we believe the efficient level of distribution losses in the final report should take into consideration 2018/19 distribution loss deliveries and the expiry of the current water plans, which provide the best opportunity for the potential trading of these losses to be formally considered.
Access charge	💬	We look forward to the QCA reviewing our supplementary submission on the access charge, noting that the proposal was a collaborative effort between Sunwater and key customer representatives. We published a fact sheet in October 2019 outlining our proposal and notified all customers.
Scheme-specific pricing issues – cost allocation factors	✓	Sunwater accepts the QCA's draft decision to apply our proposed cost allocation factors in the Bundaberg, Lower Mary River and Mareeba-Dimbulah schemes.
Scheme-specific pricing issues – other	✗	Sunwater does not agree with the QCA's assertions that we should undertake hydrological assessments to inform pricing arrangements or that we should negotiate discount pricing arrangements with irrigation customers. These are matters for the Queensland Government. In relation to the Giru Benefited Area, Sunwater considers that the hydrologic assessment information provided in the OD Hydrology report provides a more recent and representative analysis of the level of supplementation and natural yield within the GBA and requests the QCA review the level of natural yield to be recognised and applied to the customers in this system when considering final recommendations for irrigation prices for the GBA.
Alternative tariff groups	💬	Sunwater supports the alternative tariff groups proposed by the QCA, subject to support being received from customers in the affected schemes. We note Sunwater will incur one-off administration costs to update the billing system to reflect the alternative tariff groups, which will likely be offset by a reduction in administration costs going forward.

8.2 Tariff structure

8.2.1 QCA draft decision

The QCA recommended that the tariff structure should include:

- a volumetric price that covers variable costs associated with the delivery of water services
- a fixed price that reflects the balance of the revenue requirement allocated to the particular tariff group.

The QCA was disappointed that Sunwater did not engage with customers in respect of scheme-specific pricing structures, the approach to apportioning dam safety costs, drainage charges and drainage diversion charges. The QCA was of the view that it was not well placed to

engage with customers on these types of pricing issues and instead preferred Sunwater to undertake this type of engagement.

8.2.2 Sunwater response

Sunwater supports the QCA's draft decision to apply a two-part tariff structure. Sunwater engaged closely with customers on many issues dealing with tariff structures, including:

- the approach to apportioning revenues between fixed and variable costs
- the approach to estimating usage assumptions for the volumetric charges
- transparency in how costs are allocated to volumetric charges
- our preferred approach to recovering costs associated with distribution loss allocations.

Where customers provided feedback in respect of pricing issues, we sought to relay this feedback to the QCA. We note in Section 8.4.3 our support for the proposal by QFF to consider introducing access charges. For other issues, based on minimal feedback from customers, we sought to continue to apply the arrangements that the QCA had determined in the previous review.

Our submission focused on providing the necessary inputs to allow the QCA to recommend prices. However, we note that the structure and setting of prices is a matter for the Queensland Government to determine.

The terms of the referral in question were issued to the QCA on 29 October 2018, with submissions to the QCA required one month from that date. It would not have been appropriate for Sunwater to engage on many of the pricing-specific issues prior to finalisation of the terms of reference, if at all.

We look forward to engaging proactively with the QCA and the Queensland Government in respect of future review processes if there is increased expectation on Sunwater to engage with customers on issues included in the terms of the referral prior to lodging a submission.

8.3 Distribution losses

Sunwater was granted water allocations for the purpose of 'distribution loss' which account for losses involved in delivering water to customers in the distribution channels. As water needs to be stored for this purpose, the charge to distribution customers, per delivered quantity of water, is higher than if there were no distribution losses.

8.3.1 Holding (bulk) costs of unused distribution losses

QCA draft decision

Consistent with the 2012 review, the QCA considered that distribution system customers should only be allocated the bulk costs associated with the level of distribution loss allocations required to meet actual losses. It considered that Sunwater is best placed to manage the risk of distribution loss allocations as the water planning framework allows Sunwater to change the purpose of distribution loss allocations and sell them to customers. The QCA therefore recommended that the bulk holding (fixed) costs of distribution loss allocations not required to service distribution system customers should be borne by Sunwater.

Sunwater response

Sunwater accepts the QCA's draft decision.

8.3.2 Recovery of prudent and efficient distribution losses

QCA draft decision

The QCA recommended that only prudent and efficient bulk costs associated with necessary distribution loss allocations should be recovered from distribution system customers. The efficient levels of current distribution loss allocations determined by the QCA are shown in Table 19.

Table 19: Draft decision on efficient level of distribution losses

Scheme	High priority	Medium priority
Bundaberg distribution[1]	100%	48%
Burdekin Haughton distribution[2]	100%	60%
Eton distribution	100%	100%
Lower Mary River distribution[3]	100%	100%
Mareeba-Dimbulah distribution	100%	100%

1. The QCA excluded 2013/14 from the calculation due to an abnormal event related to Paradise Dam.
2. The QCA used data from 2014/15 onwards only in its calculation.
3. The QCA excluded 2013/14 from the calculation due to diversions made through the distribution system to Wide Bay Water, a bulk water customer.

The QCA agreed with Sunwater's proposal that distribution loss allocations will be transferred to entitlements held by distribution system customers, when a distribution system transitions to LMA.

Sunwater response

Sunwater accepts the QCA's draft decision in principle, however, we believe the efficient level of distribution losses in the final report should take into consideration 2018/19 distribution loss deliveries (see Table 20) and the expiry of the current water plans, which provide the best opportunity for the potential trading of these losses to be formally considered.

We also note that, for the Bundaberg distribution system distribution losses, we anticipate that 48 per cent is going to be much less than the average actual distribution losses required in the 2020/21 to 2023/24 price path period, given relatively high storage levels in the system currently.

Table 20: 2018/19 distribution loss water deliveries

Scheme	Distribution loss water deliveries (ML)
Bundaberg distribution	30,745
Burdekin Haughton distribution	51,253
Eton distribution	5537
Lower Mary River distribution	1362
Mareeba-Dimbulah distribution	18,576

8.3.3 Distribution loss allocation review and strategy development

QCA draft decision

In our November 2018 submission, we proposed to review the distribution loss allocations held by Sunwater once the LMA review process was finalised and develop a strategy for their future treatment.

In its Draft Report, the QCA agreed with Sunwater's proposal and recommended that we undertake this review and develop a strategy prior to the next irrigation price review. The QCA indicated that it expected to assess the reasonableness of our proposed strategy at that time.

Sunwater response

Sunwater recognises that it is in the interests of regional economic development for unused water to be put into productive use. We are therefore developing a strategy to seasonally assign unused distribution loss allocations.

Under the current rules, only the Bundaberg water supply scheme allows for the seasonal assignment of distribution loss allocations. The rules approved by DNRME for the Burdekin Haughton, Mareeba-Dimbulah, Lower Mary River and Eton (currently considering transition to LMA) water supply schemes specifically prohibit the seasonal assignment of distribution loss allocations.

Sunwater has recently commenced discussions with DNRME to initiate amendments to the rules to allow Sunwater to seasonally assign distribution loss allocations. Although Sunwater can seek approval from DNRME to change the Operations Manuals, DNRME confirmed that the upcoming reviews of the water plans will provide the best opportunity for such a significant change to the existing rules to be assessed, while ensuring that there are no associated impacts on the objectives for the plans and all stakeholders are properly consulted. The current expiry dates of the water plans are outlined in Table 21.

Table 21: Water plan expiry dates

Scheme	Water plan	Expiry date[1]
Lower Mary River	Mary Basin	1 September 2021
Eton	Pioneer Valley	19 December 2022
Mareeba-Dimbulah	Barron	19 December 2022
Burdekin Haughton	Burdekin Basin	1 September 2023
Bundaberg	Burnett Basin	1 September 2024

1. Expiry dates may be extended in accordance with provisions in the Water Act if a plan continues to be appropriate and is achieving the plan outcomes. Reviews may also be undertaken earlier if risks in a catchment change or significant new demands emerge that cannot be addressed under the current water plan.

To justify the amendments to the rules, Sunwater expects that we will need to meet section 198 of the *Water Act 2000* (Water Act) by:

- conducting Integrated Quantity and Quality (IQQM) modelling of the rule changes and testing against environmental flow objectives and water allocation security objectives as stated in the water plans
- consulting with stakeholders, including, for example:
  - DNRME
  - QFF
  - Sunwater's Irrigation Customer Reference Group
  - the relevant IACs
  - other key stakeholders in the schemes affected by the potential trading of unused distribution losses.
- assessing the water plan outcomes.

The trading of any unused water allocations will be done in accordance with Sunwater's water trading policy and will be consistent with the National Water Initiative.

Sunwater will also continue to investigate water infrastructure efficiencies to minimise distribution losses. In these circumstances, Sunwater will make a submission to DNRME under section 159 of the Water Act to convert these distribution loss allocations permanently to tradeable allocations.

Sunwater does not believe that we should bear costs associated with the excess distribution losses until after the reviews of the water plans have been completed, and the required amendments to the rules to permit temporary and permanent trading of these allocations are put in place. Sunwater believes that it would be premature to continue to allocate unused distribution losses to Sunwater until we have had an opportunity to advocate for changes to the water plans or operations manuals, and DNRME has had the opportunity to consider this request within the broader context of the water plan reviews. Therefore, Sunwater requests that the full distribution loss allocation should be allocated to distribution customers until the date of expiry of each water plan as indicated in Table 21.

8.4 Introduction of an access charge for all schemes

8.4.1 Sunwater proposal

In our November 2018 submission, we noted that QFF raised the possibility of an access charge in all service contract areas to cover the fixed administration costs associated with maintaining each customer account and to ensure there is no cross-subsidisation between customers who hold a small number of water allocations and those who hold larger amounts. We indicated that we would investigate this further.

Since providing our submission to the QCA, Sunwater has worked closely with QFF to develop an access charge proposal which supports cost-reflective pricing by:

- ensuring that all customers in schemes providing services to irrigation customers pay the fixed costs associated with their account and that there is no cross-subsidisation between customers
- incentivising customer behaviours that enable Sunwater to reduce those fixed costs, eg paying bills on time and maintaining a positive water account balance.

We provided a supplementary submission to the QCA on 5 July 2019 outlining our proposed approach and customer support we had received to date. We proposed a cost-reflective access charge of $950 ($2018/19), with the possibility of a 7 per cent discount for customers who demonstrated certain behaviours.[71] Revenue received from the access charge would be offset by reductions in the fixed (Part A) prices.

8.4.2 QCA draft decision

The QCA did not include a detailed assessment of our proposal in its Draft Report due to the timing of the supplementary submission. To aid its assessment for the final report, the QCA released an issues paper on Sunwater's proposal for stakeholder comment in September 2019.

[71] 80 per cent of bulk and distribution scheme customers would need to adopt the new tariff structure for Sunwater to realise the savings needed to provide this level of discount to customers.

8.4.3 Sunwater response

Sunwater supports the introduction of an access charge in each of our water supply schemes, subject to sufficient stakeholder support being received. The QCA should consider the introduction of the access charge on a scheme-by-scheme basis. This approach allows the QCA to introduce an access charge in schemes where stakeholder support is received, and to maintain current tariff structure arrangements for those schemes where support is not received. We note our original proposal requires 80 per cent of bulk and distribution scheme customers to adopt the new tariff structure to offer the 7 per cent discount. If this threshold is not achieved, we expect the discount on offer for certain customer behaviours will be lower.

Since lodging our supplementary submission to the QCA in July 2019, Sunwater has continued to engage with our customers on the access charge proposal. We published a fact sheet explaining the access charge in October 2019[72] and notified all customers, including smaller customers who may not typically be reached via other engagement channels such as Irrigator Advisory Committees. We expect interested parties will lodge a submission to the QCA as part of the irrigation price review.

8.5 Scheme-specific pricing issues

8.5.1 Bundaberg and Gin Gin main channel

QCA draft decision

The water plan allows Sunwater to make releases from Fred Haigh Dam to Gin Gin channel to supplement Bundaberg water allocations which access water from Burnett River. Up to 15 per cent of the full supply volume of Fred Haigh Dam is available to be released in this way.

As the relevant water plan provision has been rarely used since 2012, we considered that an allocation less than the current 8 per cent cost allocation factor would be reasonable. We proposed a cost allocation of 5 per cent of operating and renewals costs associated with the Gin Gin main channel and Monduran pump station. The QCA accepted this proposal in its draft decision.

Sunwater response

Sunwater supports the QCA's draft decision to apply a 5 per cent cost allocation factor. We note any changes to the final forecast operating and renewals costs associated with the Gin Gin main channel and Monduran pump station will result in different cost transfer amounts in the final pricing model.

8.5.2 Burdekin Haughton distribution system and Giru Benefited Area

Sunwater proposal

In the 2012 review, the QCA applied a discounted price for the Giru Benefited Area (GBA) tariff group on the basis that 49 per cent of water was supplied by natural yield. The QCA recommended that Sunwater investigate the hydrological circumstances of the area to confirm this arrangement or negotiate with irrigators on an alternative approach.

To help inform future pricing arrangements, we commissioned an independent report in 2017/18 on the hydrological circumstances of the GBA and provided this report to the QCA as part of our

[72] See https://www.sunwater.com.au/wp-content/uploads/Home/Customer/Fees-Charges/Pricing-review/Factsheet_Access_Charge.pdf

November 2018 submission. We indicated that it may be appropriate for the QCA to review the discount currently provided to these customers, with any resultant price increases subject to a transition path.

QCA draft decision

The QCA's consultant, Water Solutions, found several issues with the modelling undertaken in the report we commissioned and raised concerns about using the results for developing prices. Notwithstanding these issues, it considered that the contribution from natural yield was very small and concluded there was no strong basis for differential pricing.

The QCA agreed; applying the same cost-reflective prices for the Burdekin Channel tariff group to the GBA tariff group. The QCA-recommended prices were set to transition gradually to the cost-reflective prices, with the shortfall expected to be covered by the Community Service Obligation.

Sunwater response

In accordance with the QCA's recommendation from the 2012 review, Sunwater reviewed the hydrology and operation of the GBA system to seek clarification on the percentage of natural yield in the system. The QCA decided in 2012, based on information from the Interim Resource Operations Licence and in the absence of more detailed recent hydrological assessment of natural groundwater yields, that it would continue with the current longstanding arrangements. These arrangements reflected 49 per cent supply by natural yield to the GBA system.

In March 2018, Sunwater commissioned OD Hydrology to investigate the hydrological conditions and interactions within the GBA. The report recommended that if the aquifer (GBA) was unsupplemented (ie no discharge from Sunwater) and subjected over time to varying levels of demand models indicate a sustainable, reliable supply of approximately 30 per cent to 50 per cent of current demands (or 10,000-17,000 ML/a), dependent on the level of reliability sought. Essentially the report indicates that a natural yield of at least 30 per cent is feasible based on an assessment of the 38-year period modelled.

It should also be recognised that the availability and quantum of natural yield available is inherently dependent on the seasonal rainfall (both duration and volume). The impact of this seasonal variation on water releases into the Haughton Zone A and the usage of customers in this area is clearly evident in Tables 1 and 2 in the Kavanagh Report.[73] The tables depict diversions and usage for a period from 1996 to 2016 and include a number of years where diversions are significantly lower than usage (1999, 2001, 2008 and 2009) and also the alternate where diversions are equal to or greater than usage (2000, 2003, 2006, 2012 and 2015). Sunwater's experience in operating the scheme since 1987 when the dedicated diversion to the Haughton River and GBA was installed is that the seasonal variation is highly variable and there are significant periods where natural yield is the predominant supply to the Haughton Zone A customers.

Sunwater considers that the hydrologic assessment information provided in the OD Hydrology report provides a more recent and representative analysis of the level of supplementation and natural yield within the GBA and requests the QCA review irrigation prices for the GBA.

[73] Kavanagh, G. (2017), *Giru Benefited Area Haughton Zone A Review*, April 2017.

8.5.3 Burdekin Haughton distribution system and Glady's Lagoon

Sunwater proposal

In the 2012 review, the QCA decided that the Glady's Lagoon charges should apply after the first 360 ML is supplied, in recognition of natural flows to the lagoon. The QCA recommended that Sunwater investigate the hydrological circumstances to confirm the current allocation, or negotiate an alternative approach with irrigators.

In our November 2018 submission, we proposed to investigate groundwater recharge at Glady's Lagoon in 2019/20 (pending budget approval).

QCA draft decision

Given an updated hydrological assessment was not available, the QCA recommended that the existing pricing arrangement should be maintained. It recommended that once the updated hydrological assessment is undertaken, Sunwater should engage with our customers and negotiate alternative arrangements with customers. The QCA considered that this issue "is best resolved"[74] between Sunwater and our customers.

Sunwater response

The current Burdekin Basin Water Plan expires on 1 September 2023. DNRME is about to commence hydrological assessments in the Burdekin Basin to inform the review of the Burdekin Basin Water Plan. Sunwater considers that DNRME is best placed to undertake hydrological assessments on schemes with existing infrastructure as part of their role in reviewing and amending the water plans. Sunwater will be able to access DNRME's hydrological assessment once the new Burdekin Basin Water Plan is released.

In terms of which party is best placed to negotiate with customers, we note that, in a large number of cases, prices are below cost recovery (including Glady's Lagoon other than natural yield) and any price adjustments are limited by Queensland Government policy. It is not appropriate for Sunwater to negotiate Queensland Government subsidies to irrigators, particularly when the Queensland Government's clearly stated position via the referral notice is that it is the role of the QCA to recommend prices and the role of the Queensland Government to determine what prices will apply.

We also question the cost efficiency of preparing our own reports when the QCA will engage its own independent expert to either review our report or undertake its own analysis, as was the case for GBA. Sunwater considers that customers paying twice for different consultants to review the same issue is a sub-optimal outcome.

8.5.4 Mareeba-Dimbulah scheme and access charge

QCA draft decision

The QCA supported the retention of the access charge in the Mareeba-Dimbulah scheme and recommended that the current charge be maintained in real terms.

Sunwater response

Sunwater accepts the QCA's draft decision.

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[74] QCA (2019), *Draft report, Rural irrigation price review 2020–24, Part B: Sunwater,* August 2019, p132.

8.5.5 Mareeba-Dimbulah distribution system and channel customers outside the relift section

QCA draft decision

The QCA decided to maintain the current declining block tariff structure for the Part C charge applying to channel customers outside the relift section. It cited the following reasons:

- The diverse nature of customers in the scheme, with a large number of customers holding less than 100 ML of water allocations and a small number of customers holding more than 500 ML of water allocations.
- There is evidence of discounted charges for large customers being applied in other jurisdictions and internationally.

As Sunwater does not have information on the cost of supplying water to the three tariff groups, the QCA decided to maintain the current price differential. It indicated that this differential was widely supported by customers in the distribution system and had been in place for an extended period.

Nevertheless, the QCA considered there may be opportunities to simplify the pricing arrangement into two (rather than three) tariff blocks.

The QCA also stated that:

> *Sunwater, in consultation with irrigator advisory committees and customers, is best placed to consider the interests of customers and provide greater transparency as to the costs underlying the three distinct tariff groups in the channel outside the relift section. This is particularly relevant for this tariff structure that has been developed (and refined) over time to deal with local circumstances.*[75]

Sunwater response

Sunwater does not capture costs at a tariff group level so is unable to provide greater transparency to these customers of the costs underlying their Part C charges. For example, we provide customer account management centrally as this allows us to achieve economies of scale (e.g. systems, our call centre number, water accounting and compliance report). It would not be efficient for us to allocate these costs to each scheme or tariff group. This would create additional administration costs for no demonstrable customer benefit. This is not unlike the QCA's own findings for allocating its review costs to schemes.[76]

8.5.6 Mareeba-Dimbulah distribution system and Walsh River and supplemented streams

Sunwater proposal

In the 2012 review, the cost-reflective Part C and D charges for the River (Supplemented Streams and Walsh River) tariff group reflected an assumption that, on average, 40 per cent of water delivered to this section was sourced from natural stream flows. The QCA recommended that Sunwater investigate the hydrological circumstances of the supplemented streams and Walsh River to confirm this assumption.

[75] Ibid., p136.
[76] Ibid., p46.

In our November 2018 submission, we stated that a hydrological assessment may be undertaken as part of our business case for Nullinga Dam.

QCA draft decision

Given an updated hydrological assessment was not available, the QCA recommended that the existing pricing arrangement should be maintained. It recommended that once the updated hydrological assessment is undertaken, Sunwater should engage with our customers and negotiate alternative arrangements with customers. The QCA considered that this issue "is best resolved"[77] between Sunwater and our customers.

Sunwater response

Sunwater did not undertake a hydrological assessment of the supplemented streams and Walsh River as part of our investigation into Nullinga Dam.

Similar to the Burdekin Basin above, the Barron Water Plan expires on 19 December 2022. DNRME has commenced hydrological assessments to inform the water plan review. Sunwater will be able to access DNRME's hydrological assessment once the new Barron Water Plan is released.

In terms of which party is best placed to negotiate with customers, we note that, in a large number of cases, prices are below cost recovery (including Mareeba-Dimbulah – river supplemented streams and Walsh River) and any price adjustments are limited by Queensland Government policy. It is not appropriate for Sunwater to negotiate Queensland Government subsidies to irrigators, particularly when the Queensland Government's clearly stated position via the referral notice is that it is the role of the QCA to recommend prices and the Queensland Government to determine what prices will apply.

We also question the cost efficiency of preparing our own reports when the QCA will engage its own independent expert to either review our report or undertake its own analysis, as was the case for GBA. Sunwater considers that customers paying twice for different consultants to review the same issue is a sub-optimal outcome.

8.5.7 Mareeba-Dimbulah bulk water supply scheme and Barron Falls hydro facility

QCA draft decision

In the 2012 review, the QCA decided that the Barron Falls hydro facility should be attributed a proportion of the Mareeba-Dimbulah bulk water supply scheme costs. The QCA found that the HUF calculation takes into account the expected hydro volumes. However, a proportion of costs not allocated via the HUF needed to be removed from the cost base.

In response to a request for information, Sunwater proposed that 18 per cent of the operating expenditure for the Mareeba-Dimbulah bulk water supply scheme should be attributed to the Barron Falls hydro facility in the next price path period. We did not propose any changes to the approach adopted in the 2012 review to allocate a proportion of renewals costs to the Barron Falls hydro facility via the HUF. The QCA accepted these positions in its draft decision.

[77] Ibid., p137.

Sunwater response

Sunwater supports the QCA's draft decision. We note that any changes to the final operating costs in the Mareeba-Dimbulah bulk water supply scheme will result in different cost transfer amounts in the final pricing model.

8.5.8 Lower Mary River scheme and Owanyilla pump station

QCA draft decision

In the 2012 review, the QCA agreed with Sunwater's proposal that the Owanyilla pump station and main channel perform a bulk water function. The QCA therefore allocated 27 per cent of costs associated with these distribution assets to the Lower Mary River bulk water supply scheme.

In response to a request for information, Sunwater recommended that this cost allocation factor should be updated to 40 per cent for the next price path period to reflect average diversions to Tinana Barrage and Teddington Weir as a percentage of water pumped over the 2012/13 to 2017/18 period. We applied this cost allocation factor to our estimate of 2018/19 operating and electricity costs associated with the Owanyilla pump station and main channel to derive a cost transfer amount of approximately $107,000 for the 2018/19 base year (representing 10 per cent of base year costs). We also proposed to transfer 40 per cent of renewals costs associated with the Owanyilla pump station and main channel to the Lower Mary River bulk water supply scheme.

The QCA accepted these positions in its draft decision.

Sunwater response

Sunwater supports the QCA's draft decision. We note any changes to the final operating and renewals costs associated with the Owanyilla pump station and main channel will result in different cost transfer amounts in the final pricing model.

8.6 Alternative tariff groups

8.6.1 QCA draft decision

The QCA has been directed to review the tariff groups in three bulk water supply schemes and recommend alternative tariff groups and prices. A summary of the QCA's draft decision is provided in Table 22.

Table 22: Draft decision on alternative tariff groups

Bulk water supply scheme	QCA draft decision
Dawson Valley	The QCA proposed the two existing tariff groups (Dawson River and Dawson River at Glebe Weir) should be combined. Under this alternative tariff group, existing customers in the Dawson River at Glebe Weir tariff group would experience a higher fixed (Part A) price in 2020/21. There would be no price impact in the remaining price path years under the alternative tariff group. The volumetric (Part B) price would remain the same across all scheme customers.
St George	The QCA proposed the two existing tariff groups (Beardmore Dam/Balonne River and Thuraggi Watercourse) should be combined. There is no price impact on customers as there is currently no price differential between the two tariff groups. The volumetric (Part B) price would remain the same across all scheme customers.
Three Moon Creek	The QCA proposed the two existing tariff groups (River and Groundwater) should be combined as there was no basis to differentiate costs.

Bulk water supply scheme	QCA draft decision
	Under this alternative tariff group, existing groundwater customers would experience higher fixed (Part A) prices and existing river customers would experience lower fixed (Part A) prices over the next price path period. The volumetric (Part B) price would remain the same across all scheme customers.

8.6.2 Sunwater response

Sunwater supports the alternative tariff groups proposed by the QCA, subject to support being received from customers in the affected schemes. Sunwater will incur minor one-off administration costs to update our billing system to reflect the alternative tariff groups, which will likely be offset by a reduction in administration costs going forward.

9. Draft recommended prices

9.1 Our positions at a glance

Draft recommended prices		
Fixed and variable costs		Sunwater appreciates the QCA's efforts to simplify pricing outcomes for customers and accepts the QCA's draft decision with respect to fixed and variable electricity costs. However, Sunwater maintains our position that the majority of our costs are fixed and consequently the allocation of 20% of direct operations and maintenance costs to the variable component is not reflective of the fixed nature of our costs. We request the QCA review this position.
Allocating costs between medium and high priority users		Sunwater supports the QCA's draft decision in relation to the allocation of fixed costs to medium and high priority users, including our updated Headworks Utilisation Factors.
Cost-reflective and QCA-recommended prices		We note the QCA's draft recommended prices. We also note that in years when water usage is less than the historical average, volumetric prices that include a component of fixed costs and that are set below the cost-reflective level, are likely to affect the adequacy of Sunwater's revenue.

9.2 Fixed and variable costs

9.2.1 QCA draft decision

The QCA agreed with Sunwater's concerns that the fixed/variable splits adopted in the 2012 review were overly complex. In the interests of delivering simple and transparent outcomes for customers, the QCA proposed to allocate 20 per cent of direct operations and maintenance costs to variable costs for bulk water supply schemes and distribution systems.

In addition, for those tariff groups with variable electricity costs due to pumping (Barker Barambah – Redgate relift, Upper Condamine – North Branch and the five distribution systems), the QCA decided to allocate the majority of base year electricity costs to variable costs. The remaining electricity costs were assigned to fixed costs, taking into consideration the underlying nature of electricity tariffs.

9.2.2 Sunwater response

Sunwater appreciates the QCA's efforts to simplify pricing outcomes for customers and accepts the QCA's draft decision with respect to fixed and variable electricity costs.

However, Sunwater maintains our position that the majority of our costs are fixed and, consequently, the allocation of 20 per cent of direct operations and maintenance costs is not reflective of the fixed nature of these costs. Sunwater therefore expects that this approach will increase the volatility in Sunwater's revenues which, given that Sunwater's costs are predominantly fixed, represents a regulatory risk not present in the 2012 price review. This risk could be addressed in a number of ways, such as an end-of-period adjustment for unrecovered revenues or a within-period regulatory review to take into account consumption forecasts (such as the mechanism administered by IPART for WaterNSW under the *Water Charge (Infrastructure) Rules 2010*).

In addition, Sunwater is concerned that the misalignment in fixed/variable costs and fixed/volumetric prices may distort pricing signals to customers. This is particularly the case in schemes with falling usage or with large numbers of inactive users. Allocating a notional share of fixed costs to volumetric charges will result in customers who use their allocations cross-subsidising those customers who choose not to, resulting in an inefficient pricing structure.

Sunwater requests that the QCA review the 20 per cent allocation of direct operations and maintenance costs to variable costs to ensure an appropriate allocation of risk to Sunwater and equitable and efficient outcomes for customers.

9.3 Allocating costs between medium and high priority users

9.3.1 QCA draft decision

The QCA accepted the use of the Headworks Utilisation Factor (HUF) methodology to apportion fixed costs between medium and high priority water allocations in the bulk water supply schemes. However, the QCA reassessed which costs would be allocated to priority groups using the HUF. It decided that the HUF should continue to apply to asset renewals and maintenance expenditure. Further, dam safety upgrade costs, IGEM costs and insurance costs should be allocated using the HUF.

For distribution systems, the QCA considered that all fixed costs should be allocated based on nominal water allocations.

A summary of the QCA's draft decision is shown in Table 23.

Table 23: Draft decision on fixed cost allocation between high and medium priority users

Cost component	Fixed cost allocation methodology	
	Bulk water supply schemes	Distribution systems
Operations (excluding electricity, insurance and IGEM)	50% by HUF, 50% by WAE (including distribution losses)	WAE (excluding distribution losses)
Electricity	HUF	WAE (excluding distribution losses)
Insurance	HUF	WAE (excluding distribution losses)
IGEM	HUF	WAE (excluding distribution losses)
Corrective maintenance	HUF	WAE (excluding distribution losses)
Preventative maintenance	HUF	WAE (excluding distribution losses)
Renewals annuity	HUF	WAE (excluding distribution losses)
Dam safety upgrade capex	HUF	WAE (excluding distribution losses)

In our November 2018 submission, we proposed new HUFs in some schemes to take into account the latest hydrological assessments and water supply arrangements. The QCA engaged Water Solutions to undertake an independent quality assurance of the proposed new HUFs. Water Solutions found that the underlying data, assumptions and calculations resulted in appropriate calculations for the HUF. The QCA therefore accepted Sunwater's proposed HUFs.

9.3.2 Sunwater response

Sunwater accepts the QCA's draft decision.

Sunwater notes that new source models are available for some schemes, and that we will incorporate them into our next review of HUFs, most likely in preparation for the next irrigation price review.

9.4 Cost-reflective and QCA-recommended prices

The QCA notes that once revenues have been allocated into fixed and variable components, it must recommend final prices consistent with the referral and the Queensland Government's pricing principles. This largely involves converting efficient revenues to fixed and variable cost-reflective prices, comparing this to what is allowable or constrained under the referral and making recommendations.

Where multiple tariff groups exist, scheme costs are allocated using WAEs for fixed costs and usage for volumetric charges. The QCA also noted specific pricing arrangements for four bulk water schemes and two distribution systems.

The QCA observed that, for most tariff groups, the cost-reflective fixed prices are higher in real terms than in 2012, mainly due to increases in operating expenditure and renewals annuity costs. Cost-reflective volumetric tariffs were generally lower for distribution systems compared to 2012 due to the re-balancing of electricity costs.

In developing recommended prices, the QCA noted there are two key differences between the 2012 referral and the referral applying to this irrigation price review. These differences are shown in Table 24.

Table 24: Difference between referrals – fixed prices

Previous referral	Latest referral
Fixed prices at the start of the price path could be used to offset changes in volumetric prices.	Fixed prices are derived independently of volumetric prices.
The fixed bulk (Part A) price was the same for bulk and distribution system customers and, in some cases, was higher than cost-reflective fixed prices.	Fixed bulk (Part A) prices at the start of the price path for distribution system customers cannot be more than the cost-reflective fixed price.

This referral also requires the QCA to consider recommending volumetric prices below cost-reflective prices if it believes it is necessary to avoid bill impacts. The QCA considers that this "involves transitioning any volumetric price increases required to move to cost-reflective prices (and meet the lower band cost objective) in a staged manner that allows users sufficient time to adjust".[78]

9.4.1 Fixed prices

QCA draft decision

The QCA noted the following rules which apply to the bulk fixed price and the total fixed price for each tariff group:

- If the 2019/20 fixed price is **below** the QCA's cost-reflective price for 2020/21, then the 2019/20 fixed price is increased annually by inflation plus $2.38[79] until the fixed price matches the QCA's cost-reflective fixed price.

[78] Ibid., p169.
[79] From 2020/21 and increasing by inflation each year.

- If the 2019/20 fixed price is **above** the QCA's cost-reflective price for 2020/21, then the 2019/20 fixed price should remain unchanged until the QCA's cost-reflective price is reached, except for fixed Part A prices for distribution system customers.
- For distribution system customers, if the 2019/20 fixed Part A price is **above** the QCA's cost-reflective price for 2020/21, then the 2019/20 fixed Part A price should be reduced to the QCA's cost-reflective price, and this reduction should be offset by an increase in the distribution fixed (Part C) price.

Sunwater response

Sunwater notes the QCA's draft decision.

9.4.2 Volumetric prices

The QCA proposed to apply different arrangements for volumetric charges depending on whether the fixed charges are above or below lower bound costs, as shown in Table 25.

Table 25: Draft decision on volumetric prices

Impact	Existing volumetric prices below calculated cost-reflective price	Existing volumetric prices above calculated cost-reflective price
Fixed prices above lower bound costs	The existing volumetric price will be maintained in real terms until the cost-reflective revenue is reached.	The existing volumetric price is reduced to the cost-reflective price.
Fixed prices below lower bound costs	The QCA has made a specific determination on the transitional path for volumetric prices.	The existing volumetric price is reduced to the cost-reflective price.

QCA draft decision – tariff groups with prices above lower bound costs

The QCA noted there are 10 tariff groups where both the existing fixed and volumetric prices are higher than the cost-reflective prices. In these circumstances, the volumetric price is reduced to the cost-reflective price.

There are five tariff groups where the fixed prices are above cost-reflective prices and the volumetric prices are below cost-reflective prices. In these tariff groups, the QCA stated that the volumetric charge is maintained in real terms as the revenue from fixed and volumetric charges is above the lower bound charges.

The QCA noted that this approach is consistent with the revenue adequacy provisions in the referral and will not have material implications on signalling efficient costs.

QCA draft decision – tariff groups with prices below lower bound costs

The QCA notes that there are 22 tariff groups with existing fixed prices below the cost-reflective prices and volumetric prices above cost-reflective prices. For these tariff groups, the QCA has immediately reduced the volumetric price to the cost-reflective price.

There are 14 tariff groups with existing fixed prices and volumetric prices below cost-reflective prices. The QCA has adopted different approaches for these tariff groups:

- For GBA customers in the Burdekin Haughton distribution system where the difference between existing and cost-reflective prices is due to a change in the approach to allocating costs, the QCA has sought to maintain the existing volumetric (Part B and D) prices in real terms. A similar approach has been applied for the Maranoa and Barker Barambah – Redgate Relift tariff groups.

- For other schemes, the QCA has recommended volumetric prices that fully recover cost-reflective volumetric prices.

Sunwater response

We note the QCA's approach to calculating volumetric prices in respect of the referral notice. We expect that these arrangements will improve pricing outcomes for irrigation customers. However, there will be a reduction in revenues recovered by Sunwater due to the QCA's proposed treatment of volumetric prices below the cost-reflective price. While we note the QCA has identified these amounts as immaterial, they still represent a level of efficient costs that Sunwater is unable to recover from irrigation customers.

Sunwater also notes the QCA's analysis and draft recommended prices do not include the Dawson Valley – River (high priority) tariff group. Our May 2018 data shows there are 109 ML of high priority water allocations held by irrigation customers in the Dawson Valley water supply scheme. Of this, 100 ML is held by irrigation customers in the bulk water supply scheme. It is our understanding that the QCA is required to recommend prices for this tariff group. We encourage the QCA to review this and propose high priority irrigation prices for the Dawson Valley bulk water supply scheme in its final decision.

9.4.3 Inclusion of dam safety upgrade capital expenditure allowance

QCA draft decision

The QCA derived dam safety upgrade capital expenditure allowances over the price path period for four schemes. However, due to the QCA's application of the referral, only three tariff groups have different recommended prices to those calculated excluding the dam safety upgrade capital expenditure allowance. These tariff groups were:

- Nogoa Mackenzie (medium priority local management supply)
- Pioneer River
- Upper Condamine – North Branch – Risk A.

Sunwater response

Sunwater notes the QCA's draft decision.

10. Miscellaneous charges

10.1 Our positions at a glance

Miscellaneous charges		
Termination fees		Sunwater requests that the QCA review its draft decision on termination fees in light of the *Water Charge Amendment Rules 2019.*
Drainage charges		Sunwater notes the QCA's draft decision to increase current drainage charges in the Burdekin Haughton distribution system by inflation each year and to recover drainage costs in the Mareeba-Dimbulah distribution system in the Part C charges.
Drainage diversion charges		Sunwater notes the QCA's draft decision to increase current drainage diversion charges by inflation each year.
Water harvesting charges		Sunwater notes the QCA's draft decision that water harvesting charges should comprise any applicable DNRME water harvesting charges, the Part D charge the QCA recommends and a Sunwater lease fee if relevant.

10.2 Termination fees

10.2.1 QCA draft decision

The QCA recommended that:

- termination fees should be calculated as up to 11 times (including GST) the relevant cost-reflective fixed tariff
- Sunwater can apply a lower multiple to the relevant cost-reflective fixed tariff if it is in our commercial interests to do so
- Sunwater should never recover any revenue shortfall from remaining customers upon exit of the scheme by another customer.

10.2.2 Sunwater response

Sunwater notes that the *Water Charge (Termination Fees) Rules 2009* (WCTFR) will be repealed on 1 July 2020 under the *Water Charge Amendment Rules 2019*. From that date, the provisions relating to termination fees will be contained in Part 10 of the *Water Charge Rules 2010* (previously the *Water Charge (Infrastructure) Rules 2010*).[80]

Rule 72 will replace rule 7 of the current WCTFR, which provided that the maximum applicable fee was to be 10 times the relevant total network access charge. The new rules maintain the multiple at 10 times; however, the calculation of the general termination fee base has changed. The Australian Competition and Consumer Commission considered that this calculation should only include the fixed infrastructure charges that are levied with respect to the volume or unit share of the terminating customer's water delivery right (or drainage right, where applicable).

This appears to be consistent with the QCA's draft decision; however, we request that the QCA assess the new rules and update its assessment in the final report where required.

[80] Refer to the amendment rules and explanatory statement at https://www.legislation.gov.au/Details/F2019L00521

10.3 Drainage charges

10.3.1 QCA draft decision

The QCA considered that the costs of establishing cost-reflective drainage charges would likely outweigh the benefits, given difficulties of separating drainage costs from distribution costs. The QCA recommended that:

- current drainage charges for the Burdekin Haughton distribution system be increased each year by the QCA's measure of inflation
- drainage costs associated with the Mareeba-Dimbulah distribution system continue to be recovered from the Part C tariff.

10.3.2 Sunwater response

Sunwater notes this recommendation, and notes that issues of price are matters for the Queensland Government to determine.

10.4 Drainage diversion charges

10.4.1 QCA draft decision

The QCA noted the difficulties of separating drainage diversion costs from drainage costs, the immateriality of drainage diversion costs compared to other costs, and the reduced customer base to which the charges apply. It considered that the costs of establishing cost-reflective drainage diversion charges would likely outweigh the benefits. The QCA therefore recommended that current drainage diversion charges be increased each year by the QCA's measure of inflation.

10.4.2 Sunwater response

Sunwater notes this recommendation, and notes that issues of price are matters for the Queensland Government to determine.

10.5 Water harvesting charges

10.5.1 QCA draft decision

Consistent with current arrangements, the QCA recommended that distribution system water harvesting charges should comprise any applicable DNRME water harvesting charges, the Part D charge the QCA recommends and a Sunwater lease fee if relevant.

10.5.2 Sunwater response

Sunwater notes this recommendation, and notes that issues of price are matters for the Queensland Government to determine.

11. Other issues

11.1 Customer engagement

The QCA assessed the following elements of Sunwater's engagement with customers, based on the information in Sunwater's submission:

- structure—the form or structure of the engagement, including formal arrangements and the stated purpose of each of these arrangements
- timing—the timing or scheduling of consultation, including during the development of the price submission and on an ongoing basis
- scope—the scope of issues covered in the engagement.

We have summarised the QCA's findings below and responded accordingly.

11.1.1 Structure and timing of customer consultation

QCA draft decision

The QCA identified some of the key aspects of Sunwater's customer engagement activities, including:

- Irrigator Advisory Committees
- the Irrigation Customer Reference Group
- customer surveys.

The QCA recommended that Sunwater improve the structure and timing of our consultation with irrigation customers to ensure that customers are engaged on an ongoing basis (to provide more focus on what is important to customers over the course of the price path period) and prior to the next price review (to develop a pricing proposal that incorporates proposed prices for all tariff groups).

The QCA considered there to be a lack of clarity in Sunwater's submission regarding the ongoing nature of engagement, including how Sunwater intends to maintain engagement beyond its pricing investigation.

The QCA said that Sunwater should have ensured customers were engaged on an ongoing basis to support and confirm insights provided during the development of the submission to the QCA. The QCA highlighted that in many cases we had not provided evidence that engagement with customers had occurred.

Sunwater notes that in developing these recommendations, the QCA did not seek any clarification from Sunwater regarding our ongoing consultation with customers.

Sunwater response

Sunwater agrees that we did not outline the ongoing nature of our consultation in our submission. Sunwater can confirm that we are committed to maintaining and improving our customer engagement via scheme-based representative groups and the current Irrigation Customer Reference Group. Sunwater is also committed to improving every interaction our customers have

with Sunwater, whether they are online, in person or via 13 15 89. The evidence of this commitment is:

- the long-standing nature of the scheme-based Irrigator Advisory Committees
- the introduction in 2017 of the Irrigation Customer Reference Group, which meets quarterly
- the current pilot of the Lower Mary Customer Advisory Board
- the ongoing improvements to the Network Service Plans, since the 2012 QCA review, to respond to changing customer information needs
- direct engagement on the content of the renewals program and providing customers opportunities to influence the timing and necessity of negotiable projects
- transparent engagement with LMA Boards throughout the LMA process
- quarterly customer surveys, with feedback incorporated into future customer strategies
- simplified and common language self-executing Irrigation Water Supply Contracts
- enhanced website (launched October 2019)
- Customer App (in final stages of development) which will make it easier than ever before for customers to submit water orders, check account balances, submit temporary transfers and input meter reads via a smartphone
- enhanced customer feedback mechanism (in final stages of development).

Sunwater also confirms that none of these initiatives were created for the short-term purpose of the QCA irrigation price review and that they will continue well beyond the current price review.

In addition, Sunwater notes that we have engaged extensively with customers since providing our submission to the QCA in November 2018. This has included:

- email and SMS notifications to customers regarding the QCA irrigation price review
- publication of Network Service Plan fact sheets to support the revised regulatory model provided to the QCA in June 2019
- attending QFF Water and Energy Policy Committee meetings
- collaboration over a 12-month period with QFF regarding the access charge and electricity pass-through proposals, via numerous face-to-face meetings and teleconferences, including a combined meeting with QCA employees
- the preparation of fact sheets on the access charge and electricity pass-through mechanism, with notifications sent to customers via email and SMS
- meetings and teleconferences with interested customers and industry groups regarding parts of Sunwater's proposals including Queensland Canegrowers, Isis Canegrowers, the Bundaberg Regional Irrigators Group and the Burdekin River Irrigation Area Group
- responding to customer queries and providing additional information where requested.

Consequently, Sunwater believes that the QCA's recommendations are not reflective of current practice. Sunwater requests that the QCA reconsider its position on Sunwater's customer engagement in the final report.

11.1.2 Scope of customer consultation

QCA draft decision

The QCA recommended that, in addition to improving the structure and timing of our consultation, Sunwater should adjust the scope of our engagement with customers to:

- provide more focus on what is important to customers over the course of the price path period
- provide a better understanding of customer requirements prior to the next irrigation price review
- ensure that our consultation draws a clearer link between proposed expenditure and both prices and service level outcomes for customers
- develop a pricing proposal that incorporates proposed prices for all tariff groups.

The QCA noted that:

> *Pricing issues were a major concern for customers however customers were not given the opportunity to provide input on pricing related issues. Sunwater considered this a matter for QCA and the Government. Pricing is an important issue that should form part of a business's engagement program. Other rural businesses have engaged customers on pricing related issues.*[81]

It considered that:

> *Meaningful consultation relies on drawing a clear link between proposed expenditure and both prices and services. In the absence of this information customers are not capable of making informed decisions on the trade-offs and relativities involved in price and service. In terms of Sunwater's engagement, there is no clear link between the proposed costs and pricing outcomes for customers. It is clear from the customer engagement that pricing is a major concern. Sunwater's response was confined to noting the concern.*[82]

The QCA referenced a number of pricing related issues that it recommended Sunwater should investigate and consult with customers on prior to this price review. The QCA considered that Sunwater is better placed to engage with customers on these types of pricing issues, rather than the QCA. It said that effective customer engagement provides opportunities for closer alignment of outcomes sought by Sunwater and our customers, and is more likely to produce a stronger and more accepted set of arrangements.

Specifically, the QCA found that:

- There was no clear link between the proposed costs and service level outcomes for customers.
- There was no clear identification of the billing and service level outcomes customers want.
- Sunwater had not developed a targeted approach to engagement that focuses on what customers value in relation to service delivery and price/bill impacts

[81] QCA (2019), *Draft report, Rural irrigation price review 2020–24, Part B: Sunwater*, August 2019, p222.
[82] Ibid., p222.

- Sunwater's process did not clearly delineate between negotiable and non-negotiable issues, making it difficult to tailor engagement processes to be fit for purpose.

As a result of these findings, the QCA found that there was "…a material amount of customer feedback that appears to be either highly technical in nature or alternatively not typically topics that customers would be engaged on."[83] The type of customer feedback that resulted, the QCA concluded, was "…not overly informative of the customer's ultimate pricing and service preferences."[84]

Sunwater response

Sunwater is always seeking to improve the quality of our engagement with customers. Although the setting of irrigation prices is firmly in the remit of the Queensland Government, Sunwater's engagement objective throughout the development of our submission was to increase the transparency of information we provided customers and improve the understanding of customers of the difference between prices and costs, by:

- improving the Network Service Plans
- publicly releasing a customer-friendly regulatory model
- advocating for the removal of unnecessary complexity in the setting of irrigation prices.

Sunwater believes that the number and quality of stakeholders' submissions to the review, including several which drew heavily on the Sunwater regulatory model, is evidence that this engagement objective was achieved. Sunwater also commends the QCA for removing some of the complexity in the allocation of costs to fixed and variable charges that Sunwater had proposed.

Sunwater agrees that the links between service level outcomes, proposed costs and discretionary and non-discretionary services do need to be better defined. Having achieved improved transparency and more clearly linked prices and costs, Sunwater believes that we are now well placed to work with our customers to review and redefine service levels prior to the next irrigation price review.

11.2 Reinvest surpluses from schemes above lower bound cost recovery

11.2.1 QCA draft decision

The QCA stated that the pricing principles do not prevent the water businesses from returning the surplus revenue above the cost target to the relevant schemes. The QCA noted that Seqwater has proposed such an arrangement for three of its schemes and encouraged Sunwater to consider a similar arrangement for the Upper Condamine bulk water supply scheme.

11.2.2 Sunwater response

Sunwater notes that Seqwater's proposal to reinvest surplus revenue above the lower bound cost target in certain schemes was primarily due to issues with Seqwater's HUF calculations in the previous price path period. For example, in the Mary scheme, the HUF was set too high due to an error in the calculation. In the Logan scheme, amendments to the Resource Operations Plan to

[83] Ibid., p222.
[84] Ibid., p223.

include additional infrastructure meant these costs and new high priority water allocations were not considered.

These particular issues were unique to Seqwater and we do not believe it is appropriate for the QCA to suggest that Sunwater should consider adopting a similar arrangement, especially without providing context to stakeholders on the rationale of Seqwater's proposal.

Our treatment of revenue is a matter for Sunwater, in consultation with our Shareholding Ministers. Sunwater proposes that it is not appropriate or required for the QCA to make a recommendation on this.

11.3 External service contracts

In its Draft Report the QCA notes that Sunwater has an external contract with Townsville City Council for the operation of Ross River Dam. This contract expired in 2019 and we request that the QCA remove reference to Ross River Dam in its final report.

Appendix A – Electricity cost models

Refer to the Excel spreadsheet titled “Electricity cost estimation methodology and pass-through mechanism: electricity cost models”.

Appendix B – Necessary adjustments required to AECOM's historical average base year operating costs

The task of reconciling historical cost inputs and input prices to reflect current prices and expectations is a complex and time-consuming task, and one of the reasons why the adoption of a base-step-trend methodology using the most recent financial results is now more common. If not undertaken correctly, the risk of understating current operating requirements is high.

In Chapter 3, we expressed a strong preference for the QCA to adopt a more common approach to forecasting operating costs, starting with a base year using Sunwater's most recent audited financial statements (2018/19). We outlined reasons why a reversion to a commonly applied methodology represents a more appropriate starting point to forecast future direct operations and maintenance expenditure compared to AECOM's historical average base year.

Should the QCA retain AECOM's historical average base year methodology, the QCA will need to ensure that AECOM's historical average is correctly adjusted for necessary changes over the period. This includes an appropriate normalisation for input price changes that have actually occurred over the period, use of correct utilisation rates, and an application of averaging that adjusts for the different treatment of cost categories over the period chosen.

AECOM has not done this. The following sections outline a number of adjustments that need to be made if the AECOM methodology is retained:

- AECOM applies market-based indexation rates (from different sources) to normalise historical costs to reflect current year prices which understates current costs when applied to Sunwater's specific circumstances.
- AECOM normalises historical costs for labour utilisation on the assumption that each service contract reflects regional staff direct labour utilisation only. This is not the case.
- AECOM's approach incorrectly adjusts for recreational facility costs, understating normalised costs.
- AECOM's approach to normalising fleet and travel costs using a six-year average fails to consider the different treatment of these cost categories historically. If an averaging approach is applied, the calculation needs to normalise for the treatment of these costs between years. Otherwise, these costs are deliberately understated.
- AECOM's modelling does not account for the direct operations and maintenance costs of communications infrastructure that has been installed since 2017/18. These costs are not reflected in earlier years' expenditure. Adjustments are required to properly reflect these costs in the base year.

In addition to adjusting cost categories at a global level, we urge the QCA to examine all scheme-specific costs, particularly those that show a significant change between the amount spent in 2018/19 and the historical average. Many of our costs have increased, in real terms, due to circumstances outside Sunwater's control, and these will be reflected by recent, actual costs, rather than by a historical average. A summary of these scheme-adjusted costs can be found below.

We have summarised the outcome of the necessary changes in Table B1, with additional detail provided discussed throughout this appendix.

Table B1: Direct costs—required changes to QCA historical base year ($2018/19)

Cost category	Global adjustments	Scheme-specific	Total
Direct labour		522	522
Contractors		124	124
Remote communications[1]		251	251
Materials		206	206
Legal and administration		133	133
Escalation of labour costs in historical average	426		426
Utilisation adjustments for 2016/17 and 2017/18			0
Estimation of fleet costs (Plants, equipment and vehicles)	398		398
Estimation of travel costs (Travel costs)	42	21	63
Total adjustments to base year[2]	**866**	**1,257**	**2,123**

1. $16,750/year at storages in Mareeba-Dimbulah, Burdekin Haughton, Bundaberg, Proserpine, Bowen Broken Rivers, Eton, Callide Valley, Nogoa Mackenzie, Three Moon Creek, Upper Burnett, Upper Condamine, Boyne River & Tarong, Barker Barambah, St George and Macintyre Brook.
2. Actual totals may differ due to rounding.

Price adjustments

AECOM and the QCA have recognised changes in historical costs over the previous price path period and have found these costs, when compared to Sunwater and external benchmarks, are prudent and efficient. Changes in costs are attributed to factors which affect Sunwater business. For example, input prices for labour, materials and contractors, electricity and insurance move due to circumstances largely outside Sunwater's control. Importantly, Sunwater's future costs are a function of the changes in Sunwater's input prices and other changes over time.

Construction of historical average: escalation of labour, direct materials and contractors

In its 2012 review, the QCA recommended that labour costs, direct materials and contractors should be indexed by 4 per cent.[85] In its base year modelling, it appears that AECOM has applied market-based indexation rates (from different indices) for labour, direct materials and contractor costs in calculating Sunwater's historical average base year.

CPI and other market-based indices measure the movement in a basket of goods and services (or labour inputs) not directly correlated to Sunwater activities. Failure to properly account for Sunwater-specific price inputs has resulted in AECOM drastically underestimating the price of labour, materials and contractors that reflects Sunwater's current conditions, even though AECOM and the QCA found no inefficiency in the input prices for current Sunwater operations.

As a Government Owned Corporation and a company operating in a commercial environment, Sunwater is bound by both the *Government Owned Corporations Act 1993* and the *Corporations Act 2001,* which means we must comply with relevant State Government Policy, be commercial

[85] QCA (2012), *Final Report, Sunwater Irrigation Price Review: 2012-17, Volume 1,* May 2012, p323.

and ensure good governance. Sunwater has Service Level Agreements for delivery of our services and is effectively a 'price taker' for labour rates, electricity tariffs, local authority rates and insurance premiums.

The labour escalation for wages should be based on the Sunwater Enterprise Agreement, currently being negotiated under the Queensland Government-approved bargaining framework, for the period 2018–2021, which includes pay increases of 3 per cent per annum and no forced redundancies. Previous Sunwater Enterprise Agreements (which covered the 2013-18 period) also included 3 per cent.

Sunwater requests that the QCA adjust the labour escalation rates in its modelling to estimate the historical base year to 3 per cent for the 2013–18 period. This increases total base year costs from $59.864 million to $60.289 million. Table B2 below shows the changes by service contract to AECOM's input years (before being adjusted for IGEM) in AECOM's model of Sunwater's operating costs.[86]

Table B2: Direct labour escalation—3 per cent ($2018/19, $'000)

	AECOM proposed base year	Sunwater's 3% EBA obligation	Difference
Barker Barambah	961	969	8
Bowen Broken Rivers	1,369	1,381	12
Boyne River & Tarong[1]	818	818	-
Bundaberg bulk	1,376	1,391	15
Burdekin Haughton bulk	3,091	3,118	27
Callide Valley	1,333	1,346	13
Chinchilla Weir	106	107	1
Cunnamulla	42	43	1
Dawson Valley	848	859	11
Eton bulk	1,637	1,651	14
Lower Fitzroy	213	215	2
Lower Mary River bulk	121	123	2
Macintyre Brook	975	985	10
Maranoa River	29	29	-
Mareeba-Dimbulah bulk	1,210	1,221	11
Nogoa Mackenzie bulk	2,299	2,322	23
Pioneer River	1,223	1,233	10
Proserpine River	1,152	1,162	10
St George bulk	1,046	1,061	15
Three Moon Creek	507	512	5
Upper Burnett	867	876	9
Upper Condamine	1,227	1,241	14
Bundaberg distribution[1]	10,355	10,355	

[86] AECOM's model, 'QCA modelling rural irrigation opex review Model v0 AECOM with QCA adjustments', Base year tab.

	AECOM proposed base year	Sunwater's 3% EBA obligation	Difference
Burdekin Haughton distribution	17,129	17,247	118
Eton distribution	3,083	3,108	25
Lower Mary River distribution	964	976	12
Mareeba-Dimbulah distribution	5,882	5,940	58
Total	**59,864**	**60,289**	**426**

1. Where the QCA has already made scheme-specific labour adjustments, we have not altered its estimates.

Recreational facilities calculations

The Minister's referral notice states that costs associated with the provision of recreation facilities that would not otherwise be incurred to supply water are not to be included from 2020/21, unless the QCA is satisfied that there is customer support for these costs to remain included.

In our June 2019 update, we provided the QCA with a list of costs associated with recreational facilities. The reduction represents a proportional adjustment to the total operating and maintenance costs based on the percentage of infrastructure attributed to recreational facilities. The proportional reduction reflects the fact that some assets are shared for both Sunwater specific and recreational use. For example, a jetty may be used for Sunwater activity as well as recreational activity. The operation and maintenance costs for the jetty have been removed based on the proportional use of the jetty for recreation purposes.

It appears that the recreational facility adjustments have been carried across to AECOM's base year calculations as percentage adjustments. We support this approach.

Fleet adjustments

AECOM has used a six-year historical average of fleet costs to calculate its base year for each service contract.[87] This reflects that fleet costs are now directly charged, rather than being local area support costs. AECOM's proposed six-year average for each service contract is shown in the second column of Table B3 below. AECOM's total base year fleet costs are shown in the third column. However, in 2013/14 and 2014/15, almost all 'Plant & Equipment' costs were charged to corporate support—most fields in the first two years of the dataset are zero.[88] This skews the historical average down, understating the average fleet costs in years with data. We recommend that the QCA adopt a four-year average of fleet costs, to avoid under-recovery.

Sunwater's revised four-year average is provided in the fourth column of Table B3. Sunwater's proposed total base year fleet costs are in the fifth column.

[87] AECOM has averaged the sum 'Plant & Equipment' in each year from 2012/13 to 2017/18, and used that value to adjust its semi-total of Sunwater's proposed fleet costs for 2019/20. AECOM's full calculation is: SW 2019/20 estimate – 2017/18 + six-year historical average.
[88] References AECOM's model, 'QCA modelling rural irrigation opex review Model v0 AECOM with QCA adjustments, 'Charts Total' tab, A806:S833.

Table B3: Fleet adjustments– four-year average ($2018/19, $'000)

	AECOM calculation		Sunwater revised calculation	
	Average 2012/13–2017/18	Revised total	Average 2014/15–2017/18	Revised total
Barker Barambah	1.1	32.5	1.7	33.8
Bowen Broken Rivers	34.1	24.9	49.1	117.6
Boyne River & Tarong	1.1	26.8	1.6	26.5
Bundaberg bulk	12.0	(10.5)	18.0	30.9
Burdekin Haughton bulk	15.0	57.6	10.8	52.0
Callide Valley	2.2	52.9	3.3	53.2
Chinchilla Weir	-	-	-	-
Cunnamulla	-	-	-	-
Dawson Valley bulk	1.7	17.4	2.6	23.2
Eton bulk	8.5	38.4	12.8	50.0
Lower Fitzroy	0.8	22.5	1.2	22.1
Lower Mary River bulk	0.5	1.1	0.7	1.0
Macintyre Brook	3.9	34.5	5.8	31.7
Maranoa River	-	-	-	-
Mareeba-Dimbulah bulk	0.7	27.1	1.0	27.5
Nogoa Mackenzie bulk	1.5	37.6	2.9	43.2
Pioneer River	1.5	74.4	2.3	75.1
Proserpine River	4.7	52.2	7.1	48.0
St George bulk	9.3	54.3	14.0	53.1
Three Moon Creek	1.5	14.7	2.2	17.9
Upper Burnett	6.8	31.0	10.2	41.5
Upper Condamine	1.2	51.9	1.8	53.1
Bundaberg distribution	129.8	512.2	194.6	613.8
Burdekin Haughton distribution	178.8	473.1	279.9	591.2
Eton distribution	52.7	194.0	79.0	225.5
Lower Mary River distribution	15.3	41.1	23.0	37.6
Mareeba-Dimbulah distribution	52.1	511.5	78.2	502.0
Total	**536.8**	**2,373.0**	**803.9**	**2,771.3**

Travel and accommodation cost adjustments—incomplete dataset

AECOM has used a six-year historical average of travel and accommodation costs to calculate its base year for each service contract.[89] This reflects that these costs are now directly charged, rather than being local area support costs. AECOM's proposed six-year average for each service

[89] AECOM has averaged the sum 'Travel&Accommodation' in each year from 2012/13 to 2017/18, and used that value to adjust its semi-total of Sunwater's proposed fleet costs for 2019/20. AECOM's full calculation is: SW 2019/20 estimate – 2017/18 + six-year historical average.

contract is shown in the second column of Table B4 below. AECOM's total base year travel and accommodation costs are shown in the third column.

However, in 2013/14 and 2014/15, almost all 'Travel & Accommodation' costs were charged to corporate support or local area support costs—most fields in the first two years of the dataset are zero.[90] Due to issues with cost controls, many service contracts had not begun directly charging in 2015/16 either.

AECOM has not normalised for these adjustments, which skews the historical average down and understates the average travel and accommodation costs. We recommend that the QCA adopt a three-year average of travel and accommodation costs, to avoid under-recovery.

Sunwater's revised three-year average is provided in the fourth column of Table B4. Sunwater's proposed total base year travel and accommodation costs are in the fifth column.

[90] References AECOM's model, 'QCA modelling rural irrigation opex review Model v0 AECOM with QCA adjustments, 'Charts Total' tab, A806:S833.

Table B4: Travel and accommodation cost adjustments three-year average ($2018/19, $'000s)

	AECOM calculation	Sunwater revised calculation	
	Average 2013–19	Average 2017–19[1]	Revised total
Barker Barambah	2	2	1
Bowen Broken Rivers	7	5	-2
Boyne River & Tarong	4	5	1
Bundaberg bulk	3	4	1
Burdekin Haughton bulk	11	25	14
Callide Valley	7	10	3
Chinchilla Weir	0	0	0
Cunnamulla	0	1	1
Dawson Valley bulk	3	4	1
Eton bulk	8	10	2
Lower Fitzroy	1	2	1
Lower Mary River bulk	0	0	0
Macintyre Brook	2	3	1
Maranoa River	0	0	0
Mareeba-Dimbulah bulk	12	15	3
Nogoa Mackenzie bulk	12	14	3
Pioneer River	6	7	1
Proserpine River	14	14	0
St George bulk	5	5	0
Three Moon Creek	2	5	3
Upper Burnett	4	6	2
Upper Condamine	3	5	2
Bundaberg distribution	6	7	1
Burdekin Haughton distribution	5	5	0
Eton distribution	3	3	0
Lower Mary River distribution	1	1	1
Mareeba-Dimbulah distribution	4	5	2
Total	**124**	**165**	**42**

1. Excludes 2013/14, 2014/15 and 2015/16. 2. These numbers are not tabulated by AECOM, but can be constructed using the original source data provided by Sunwater. AECOM's historical averages have been based on six years of data, Sunwater's are based on three.

Remote satellite costs not included for nineteen sites

AECOM's modelling does not account for the direct operations and maintenance costs of communications infrastructure that have been installed since 2017/18. These costs are not reflected in earlier years' expenditure. The service contract, assets and costs affected are outlined in Table B5 below.

Table B5: Remote satellite direct operations and maintenance costs ($2018/19)

Service contract	Asset	Base year cost
Barker Barambah	Bjelke Peterson Dam	16,750
Bowen Broken Rivers	Eungella Dam	16,750
Boyne River & Tarong	Boondooma Dam	16,750
Bundaberg bulk	Fred Haigh Dam	16,750
Burdekin Haughton bulk	Burdekin Falls Dam	16,750
Callide Valley	Callide Dam	16,750
Eton bulk	Kinchant Dam	16,750
Macintyre Brook	Coolmunda Dam	16,750
Mareeba-Dimbulah bulk	Tinaroo Falls Dam	16,750
Nogoa Mackenzie bulk	Fairbairn Dam	16,750
Three Moon Creek	Cania Dam	16,750
Upper Burnett	Wuruma Dam	16,750
Upper Condamine	Leslie Dam	16,750
Proserpine River	Peter Faust Dam	16,750
St George bulk	Beardmore Dam	16,750
Total		**251,250**

Scheme-specific adjustments

AECOM's historical average base year costs were insufficient to cover current and/or future direct operations and maintenance costs for some service contracts. The totals are summarised in Table B6 below, with the following sections providing further detail.

Table B6: Scheme-specific base year cost adjustments ($2018/19, $'000)

	Direct labour	Materials	Contractors	Travel & accommodation	Legal & administration	Total (by scheme)
Barker Barambah	28					28
Bowen Broken Rivers	24					24
Bundaberg bulk	55	25	14			94
Burdekin Haughton bulk				21	83	104
Callide Valley			32		41	73
Macintyre Brook	47					47
Mareeba-Dimbulah bulk	24					24
Nogoa Mackenzie bulk			43		9	52
Upper Burnett	38					38
Upper Condamine	16					16
Burdekin Haughton distribution	18	156				174
Eton distribution	149		35			184
Mareeba-Dimbulah distribution	123	25				148
Total	**522**	**206**	**124**	**21**	**133**	**1,006**

Barker Barambah

Table B7: Barker Barambah—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
River surveillance (increase since the previous price path period)	Direct labour	28

AECOM's averaging approach does not account for additional costs in river surveillance at Barker Barambah. Due to decreasing water supplies and to ensure Sunwater meets customer service standards, there has been a growing need for additional surveillance of rivers to ensure water ordering and usage is optimised.

Prior to 2018/19, lower levels of surveillance were undertaken with available resources at a lower cost. This additional activity is performed using current resources (2 full-time equivalents (FTEs)) with operations and maintenance activities normally undertaken by these staff resourced externally.

The additional resourcing requirement has been calculated as 0.4 FTE in 2018/19. Based on a combined regional average of 1 FTE at $110k, this is approximately $44k. As the demand for surveillance is expected to continue, this amount needs to continue for the next price path period.

AECOM's recommended base year includes part of the additional 0.4 FTE, but an additional $28k is required to meet the operational requirements of the scheme, in addition to the adjustment identified in Table B2. Removal of this cost will result in Sunwater not being compensated for the costs of river surveillance currently being provided. Reverting to lower levels of river surveillance is not acceptable as it inappropriately increases risks to customer supplies.

Bowen Broken Rivers

Table B8: Bowen Broken Rivers—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
Reduced labour costs in historical average	Direct labour	24

There are two exceptionally low years for direct labour (2014/15 and 2015/16) due to the changed operating model which Sunwater implemented during this period. More recent labour costs are a better indication of direct labour costs for the 2021–24 price path period. This results in an increase to direct labour of approximately $24k, in addition to the adjustment to labour identified in Table B2. We recommend that the QCA remove 2014/15 and 2015/16 as outliers from its historical average.

Bundaberg bulk

Table B9: Bundaberg bulk—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
0.5 FTE	Direct labour	55
Normalised operations, weed control and fish habitat maintenance	Materials	25
	Contractors	14

AECOM applies an average to years heavily impacted by flood restoration. Lower maintenance levels in response to flood damage repairs means that the costs in those years are substantially understated compared to current levels of operations and maintenance.

The Bundaberg bulk water supply scheme incurs maintenance costs that are higher now than what they were historically. This reflect more recent responses to environmental concerns surrounding fish habitats. The greater focus on fishway monitoring and maintenance in response to public and government scrutiny will continue over the next price path period. Applying a simple average to historical costs which does not include costs of response to environmental concerns understates the current level of costs required to operate and manage the scheme.

Finally, AECOM's averaging does not take into account the increasing levels of weed control costs associated with a higher level of focus around Sunwater's obligations under the *Biosecurity Act 2014.* Higher costs in recent years to control declared weeds on Sunwater lands and waterways and associated increases in maintenance costs are not reflected in prior years and therefore require adjustment.

The increased workload associated with normalised operations and maintenance, fish habitat monitoring and maintenance, and weed control will require additional resources (0.5 FTE), materials, and an allowance for contractors, in addition to the adjustment identified in Table B2.

Burdekin Haughton bulk

Table B10: Burdekin Haughton bulk—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
Fatigue and risk management—recent change to operational approach	Travel & accommodation	21
Local authority rates	Legal & administration	83

The Burdekin Haughton bulk water supply scheme has seen significant increases in both travel and accommodation, and local authority rates in recent years.

There has been a recent shift in Sunwater's approach to risk and fatigue management in the North Region. To ensure that Sunwater has an extended group of staff trained to manage each individual dam site during a prolonged event[91] or due to North Region team absences, dam staff from the Bundaberg/Lower Mary Region and South Region are brought up when relief is required. Due to the size of North Region, and the location of its assets, the impact on its travel and accommodation costs will be significant. It is significantly cheaper, however, than increasing the number of North Region dam staff. It is also an opportunity to build internal capacity and collaborate across our business—part of Sunwater's broader regional strategy.

We anticipate that an adjustment to AECOM's averaging needs to incorporate current level costs for base year travel and accommodation for this service contract. We note, applying the global adjustments proposed for travel and accommodation costs will also achieve the same outcome as this change.

Local authority rates have also changed significantly since 2012/13. Year-on-year changes in local authority rates are shown in Table B11. While they are the subject of ongoing discussions with councils, we anticipate that costs will continue to increase.

Table B11: Burdekin Haughton bulk—local authority rates ($2018/19, $'000)

	2013	2014	2015	2016	2017	2018	2019
Local authority rates	58	69	80	172	191	225	(13)

Between 2012/13 and 2017/18, rates fluctuated due to updates in Valuer General property valuations and changes to our property portfolio. Rather than applying an average, given the negative adjustment in 2018/19, the most appropriate starting point is the forecast local authority rates for 2019/20—$236k, as per Sunwater's June 2019 update, an increase of $83k.

[91] In accordance with ANCOLD and Sunwater standards and procedures.

Callide Valley

Table B12: Callide Valley—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
Callide diversion channel—roadworks and desilting	Contractors	32.3
Local authority rates	Legal & administration	40.6

Sunwater conducted significant roadworks and desilting on the Callide diversion channel in 2019. These works have been added to our routine work program and will be required again by 2023. As a result, these works (along with the existing operations and managements activities) will require higher base year costs than those currently proposed by the QCA.

A six-year simple average of historic costs will not account for the changes in activity that have occurred in this scheme and are likely to continue over the period. A three-year average, from 2016/17 to 2018/9 is probably the best proxy of year-on-year contractor costs, given the expanded scope of works in Callide Valley. This will require an increase of $32.3k to the current base year contractor costs.

Local authority rates have only been charged directly to this service contract since 2016/17. The longer historical average proposed by the QCA does not account for local authority rates before this year. We anticipate a reduction to the 2018/19 charges in future years, of $30k, but an increase to the remaining charges of 8 per cent in 2019/20. This results in a base year amount of $75.6k. We will require an additional $40.6k to meet this cost.

Macintyre Brook

Table B13: Macintyre Brook—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
Reduced labour costs in historical average	Direct labour	47

There are three low years for direct labour (2013/14, 2014/15 and 2015/16) due to the changed operating model which Sunwater implemented during this period. More recent labour costs are a better indication of direct labour costs for the 2021–24 price path period, which will be around $271k.

This results in an increase to direct labour of approximately $47k, in addition to the adjustment identified in Table B2.

Mareeba-Dimbulah bulk

Table B14: Mareeba-Dimbulah bulk—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
Reduced labour costs in historical average	Direct labour	24

In 2018, Sunwater underwent a significant regional restructure of roles and responsibilities and carried several vacancies for the last half of 2018. The Operations Manager role (Exec02) was vacant and covered by internal staff until appointment of full time FTE in July 2018. In addition, the SW05 role of Works Scheduler was vacant for approximately five months and covered internally. Based on rates of pay for these roles and impacts of transitioning other staff between roles, there was approximately $80k reduced direct labour.

As a result, from 2015, all years except 2018 significantly exceed the AECOM base year costs suggesting the simple average is not representative of an appropriate base for operating cost requirements. Sunwater would not be able to meet customer standards of service at this level of costs. AECOM's adjustment therefore does not provide Sunwater the opportunity to recover efficient costs in this scheme.

Noting both the uplift to 2018 direct labour costs, and the general change in costs from 2015/16, an additional $24k will be required in this service contract, in addition to the adjustment identified in Table B2.

Nogoa Mackenzie bulk

Table B15: Nogoa Mackenzie bulk—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
Corrective civil works in dam surrounds	Contractors	43
Increased legal work	Legal & administration	9

While there has been some fluctuation since 2012/13, there has been a sustained increase in contractor use in and around some corrective civil works in the dam surrounds. In 2019, contractor expenditure reached $343k, but is expected to come back down to $300k per year from 2019/20.

This requires an adjustment of $43k to the current base year.

Legal and administration costs also need to be increased slightly. While the higher costs in 2015/16 and 2016/17 are related to a one-off event, there is an increased in legal work around people on the flood margin and negotiating recreational facility handover details. This work is expected to add approximately $9k to the QCA's base year costs.

Upper Burnett

Table B16: Upper Burnett—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
0.5 FTE increase on historical average	Direct labour	38

This scheme has experienced increasing maintenance costs due to environmental concerns for fish habitats. There is now a greater focus on fishway monitoring and maintenance in response to public and government scrutiny. AECOM's historical average base year also includes years impacted by flood restoration—these years had lower maintenance levels in response to flood damage and repair. This meant that the costs in those years are substantially understated compared to normal levels of operations and maintenance.

Additionally, decreasing water supplies has caused a growing need for additional surveillance of Rivers to ensue water usage is optimised.

These increased demands are equivalent to 0.5 FTE, or $38k, in addition to the adjustment identified in Table B2.

Upper Condamine

Table B17: Upper Condamine—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
Historical average affected by low-cost years (2013/14 and 2014/15)	Direct labour	16

Direct labour in the Upper Condamine has increased in recent years, consistent with Sunwater's strategy to better reflect the direct costs of services and improving transparency of those costs. 2019 actual costs are reflective of direct labour costs in the 2021–24 price path period, are consistent with costs in all years, except when the service delivery model for bulk water systems was altered (2013/14 and 2014/15). This requires a $16k adjustment to the base year direct costs, in addition to the adjustment identified in Table B2.

Burdekin Haughton distribution

Table B18: Burdekin Haughton distribution—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
Aquatic weed management	Direct labour	18
Aquatic weed management	Materials	156

Direct labour in 2014/15 and 2015/16 was increased due to the intensive treatment of aquatic weeds. Since 2016/17, operations and maintenance at the Burdekin Haughton distribution system has transitioned from being discreetly managed as its 'own' asset, to being part of a regionally focused team. As mentioned previously, part of the risk and fatigue management of Sunwater's regional plan is to upskill staff across the organisation, to ensure we have trained dam operators available when and where they are needed.

This resulted in lower direct labour costs in 2017/18 and 2018/19, as some distribution staff spent significant time filling roles in other service contracts. As there was a general decline in aquatic weeds due to increased turbidity in those years, those staff who would otherwise have been needed to deal with the weed, were made available to cover other roles. This saw a direct reduction in direct labour in Burdekin Haughton. The benefits for other service contracts included reduced contractor spend.

In 2019/20 and 2020/21, we expect to undertake a more extensive aquatic weed management program, due to regional weather conditions and improving water quality. There will be higher direct labour costs as a result, both in the years when the weed is intensively treated, and to maintain it.

As the adjustment to remove $136k from direct costs will result in more than a 1.3 FTE reduction, it will impact on Sunwater's ability to meet service targets and customer expectations. An adjustment of $18k is required, in addition to the adjustment identified in Table B2.

The QCA's base year contractor costs are more accurate than Sunwater's June 2019 update, and helped us identify a budget oversight. The variability in this cost category is closely aligned to our preventative maintenance work program, and accounts for additional mechanical weed removal (excavator) and drain spraying (expected to be needed from 2020/21 and onwards), combined corrective contractors to cover civil earthworks repairs. Similar costs in 2013–2015 were directly related to mechanical weed removal to support the Acrolein application program.

As we expect our 2020/21 aquatic weed management program to be comparable to work done between 2012/13 and 2014/16, we require base year contractors to be $1.31k. This aligns with the anticipated work program, and is consistent with historical expenditure. The outlier of $1.744k in 2018/19 was due to urgent corrective work on Haughton Main channel (Headworks) to repair extensive erosion along 5km section of channel caused by the February monsoon event that threatened the structural integrity of the asset. As this was a main channel, we prioritised the works and the contractor engaged was $250k. It is not expected that we will need to do this work at such short notice, or for a premium price in 2020/21.

Material costs relate directly to the increase (decrease) in Acrolein each season. In 2014/15 and 2015/16, we used more than 100 acrolein cylinders at approximately $6k per cylinder. In the past three years, the use of Acrolein has been significantly less (down to 17 cylinders in 2017/18) due to dirty water in channels slowing growth. In 2019/20, we have seen aquatic weed growth increase significantly due to optimal conditions (ie sunny, dry and clean channel water). Based on experience, we expect to have more an extensive aquatic weed season for at least the next two years.

Based on observations of weed condition and weed treatments already completed in 2019/20 so far, we expect that Sunwater will require the original materials costs to be reinstated to account for additional cylinders expected to be used and the increased cost of cylinders since 2015/16. This amount is still materially less or on par with the four years (2012/13 to 2015/16) when high use of chemical was required. The total adjustment to materials is $156k.

Managing aquatic weed growth is a priority if we are to maintain channel capacity to service customer demand during peak season.

Eton distribution

Table B19: Eton distribution—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
Maintaining current service standard	Direct labour	149.50
Channel and balancing storage desilting	Contractors	35

The Sunwater direct labour target is calculated using the resource planning tool. It allows managers to identify and allocate all staff to the service contracts and operations and maintenance activities, based on the expected percentage of that person's time. A reduction as high as the one proposed by the QCA will require a reduction in staff, which will impact Sunwater's ability to meet our service standards.

Further, of the seven years of actual costs (2012/13 to 2018/19), direct labour costs have materially exceeded the QCA's base year four times. The historical average used by the QCA is

being influenced by the two outlier years, and it has materially impacted the result. If we exclude the outlier years, the QCA's historical base year becomes $619k.

While we submit that the full amount forecast is likely to be needed, and we propose the full amount is retained, the QCA's base year should at the very least be increased to $619k.

Our proposed adjustment for direct labour is $149.5k, in addition to the adjustment identified in Table B2.

The QCA's contractor base year also needs to increase to reflect the concentrated work currently being undertaken to desilt the channels and balancing storages. While the works will be ongoing, we expect the cost will decrease over time. Based on the costs between from 2014/15 to 2017/18 (when this work was last carried out), we expect to need $262k per annum—an increase of $35k. This takes into account that costs will continue at a higher level for now, but will reduce in time.

Mareeba-Dimbulah distribution

Table B20: Mareeba-Dimbulah distribution—adjustments to base year costs ($2018/19, $'000)

Adjustment	Cost category	Adjustment to base year (2018/19 actual and QCA's historical average)
Maintaining current service standard	Direct labour	123.0
Rubicon software maintenance costs	Legal & administration	25

Direct labour in Mareeba-Dimbulah distribution system consists of 22 staff charging collectively 33,430 hours to the service contract, and has been planned using Sunwater's resource planning tool, which was reviewed by AECOM. The increase in costs compared to the QCA's historical average base year reflects Sunwater's business strategy to improve transparency of costs, direct charge more labour and reduce local area support rates. There has also been an increase in the combined Mareeba-Dimbulah water supply scheme resource pool of 1 FTE (SCADA Technician).

An adjustment of $123k is required, in addition to the adjustment identified in Table B2.

Legal and administration costs also required adjustment, as the QCA's historical base year understates the Rubicon software maintenance costs (introduced in 2016/17). In addition to a higher annual cost, Burdekin Haughton distribution, Eton distribution and Mareeba-Dimbulah distribution now have larger shares, as Emerald distribution is no longer a Sunwater scheme. This results in an increase of approximately $12k per scheme. Combined, these two changes result in a $25k adjustment to Legal & administration costs.

Appendix C – Historical renewals and flood damage projects

This appendix contains Sunwater's response on each of the historical renewals and flood damage projects sampled by the QCA's consultant, AECOM.

Table C1: Response to reviewed historical renewals projects ($ million)

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
Prudent and efficient								
16PRO03 - Investigate Spillway Chute Floor - Peter Faust Dam	$0.61	$0.00	$0.61	0.0%	Accepted	$0.61	$0.00	0.0%
16MVA01 - Reinstate Down Stream Rock Protection - Mary River Barrage (Options/Design 2016)	$0.39	$0.00	$0.39	0.0%	Accepted	$0.39	$0.00	0.0%
16CUW02 - Allan Tannock weir - Refurbish Outlet Works Gate	$0.03	$0.00	$0.03	0.0%	Accepted	$0.03	$0.00	0.0%
14MAB05 - Coolmunda Dam: Refurbish Float Wells (Float Guides, Ropes, Tie Rod Ends)	$0.28	$0.00	$0.28	0.0%	Accepted	$0.28	$0.00	0.0%
17BBR04 - Plug the River Conduit Inlet Tower Base Permanently - Eungella Dam	$0.41	$0.00	$0.41	0.0%	Accepted	$0.41	$0.00	0.0%
15PIO06 - Teemburra - Replace Control System including SCADA for Teemburra Dam, Palmtree Ck & Tannalo Valves - Teemburra Dam	$0.47	$0.00	$0.47	0.0%	Accepted	$0.47	$0.00	0.0%
15DAW01 - Upgrade PLC and SCADA System - MOSS Pump Station (Drawings/Spec/Cost Estimate 2015, Supply/Install/Commission 2016)	$0.26	$0.00	$0.26	0.0%	Accepted	$0.26	$0.00	0.0%
12LFZ12 - Replace Control Equipment - Eden Bann Fishway (Scope/Options/Design 2014, Procure/Install/Commission 2015)	$0.14	$0.00	$0.14	0.0%	Accepted	$0.14	$0.00	0.0%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
12MDA57 - Replace lighting system at the Tinaroo Falls Dam Gallery	$0.48	$0.00	$0.48	0.0%	Accepted	$0.48	$0.00	0.0%
13BIA48 - FD01 (2013) Flood Damage Repairs - Don Beattie PSTN	$1.27	$0.00	$1.27	0.0%	Accepted	$1.27	$0.00	0.0%
11ETO06 - Replace Switchboards and Control Equipment - Brightley Pstn 1 & 2	$0.97	$0.00	$0.97	0.0%	Accepted	$0.97	$0.00	0.0%
14MDA13 - Implement Findings: Strategic Plan for MDWSS I&D SCADA - Stage 2	$0.88	$0.00	$0.88	0.0%	Accepted	$0.88	$0.00	0.0%
14MDA33 - Study Copper Sulphate Research Project - West Barron Main Channel	$0.44	$0.00	$0.44	0.0%	Accepted. However, Sunwater notes that Appendix A of AECOM's capex report incorrectly states that the Sunwater expenditure claim is $497k.	$0.44	$0.00	0.0%
Systemic issues								
07PIO05 - Replace Regulating Valve RV01 - Palmtree Creek Pipeline	$0.96	$0.09	$0.86	9.5%	Accepted	$0.86	$0.09	9.5%
13NMA04 - Spillway Seepage Investigations - Fairbairn Dam	$0.73	$0.07	$0.66	10.2%	Accepted	$0.66	$0.07	10.2%
17BRI31 - Install STG II Functional Outlet Works - Giru Weir	$0.77	$0.14	$0.62	18.8%	Accepted	$0.62	$0.14	18.8%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
Project specific adjustments								
15CVA16 - Callide Flood Review[1]	$1.55	$0.14	$1.41	8.8%	Sunwater believes that due to the nature of this project, the inefficiencies identified by AECOM should not be considered in the calculation of the systemic issue deduction. Chapter 4 of our submission provides further detail.	$1.41	$0.14	8.8%
Total	**$10.62**	**$0.45**	**$10.17**	**4.2%**		**$10.17**	**$0.45**	**4.2%**
Project specific adjustments		**-**		**-**			**$0.14**	**1.3%**
Adjustments for systemic issues		**$0.45**		**4.2%**			**$0.31**	**2.9%**

1. Identified as a systemic issue in AECOM's capex report.

Table C2: Response to reviewed forecast transitional renewals projects ($2018/19, $'000)

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
Prudent and efficient								
0000001060 - BURDEKIN FALLS DAM - Study: 20yr Dam Safety Review - Burdekin Falls Dam	$143	$0	$143	0%	Accepted	$143	$0	0%
0000002872 - SYSTEM - Study: 5yr Dam Comprehensive Inspection (by 1 Dec 2019)	$122	$0	$122	0%	Accepted	$122	$0	0%
0000004935 - BOONDOOMA DAM - Study: 20yr Dam Safety Review - Boondooma Dam (19BYR09)	$337	$0	$337	0%	Accepted	$337	$0	0%
0000004992 - WURUMA DAM - Study: 20yr Dam Safety Review - Wuruma Dam	$329	$0	$329	0%	Accepted	$329	$0	0%
0000006501 - EUNGELLA DAM - Study: 20yr Dam Safety Review including anchor pullout test and intrusive inspection (by 30 June 2020)	$349	$0	$349	0%	Accepted	$349	$0	0%
0000008492 - TINAROO DAM - Study: 5yr Dam Comprehensive Inspection (19TIN07)	$142	$0	$142	0%	Accepted	$142	$0	0%
000008908 - UPPER CONDAMINE DISTRIBUTION - Replacement meter program as per 2015 UCO strategy ($41,595 / yr) (P2)	$78	$0	$78	0%	Accepted	$78	$0	0%
0000009478 - SYSTEM - Study: 5yr Dam Comprehensive Inspection (by 1 Jun 2019) (19UCO03)	$110	$0	$110	0%	Accepted	$110	$0	0%
0000058091 - SYSTEM - Study: 20yr Dam Safety Review (by 1 Dec 2019)	$231	$0	$231	0%	Accepted	$231	$0	0%
0000064409 - KROOMBIT DAM - 20 Dam Safety Review (to be done by 1st June 2020)	$254	$0	$254	0%	Accepted. However, Sunwater notes that Appendix B of AECOM's capex report shows the nominal value for this	$254	$0	0%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
					project (instead of $2018/19).			
0000065102 - THREE MOON CK GROUNDWATER DIST - Meter Replacement Three Moon Creek (8 per year) (P2)	$82	$0	$82	0%	Accepted	$82	$0	0%
0000065104 - CALLIDE GROUNDWATER DISTRIB - Meter Replacement (12 per year) - Callide Valley (P2)	$124	$0	$124	0%	Accepted	$124	$0	0%
0000065145 - PROSERPINE RIVER DISTRIBUTION - Replace Meter Program (8 per year) - Proserpine River (P2)	$64	$0	$64	0%	Accepted	$64	$0	0%
0000065147 - MACINTYRE BROOK DISTRIBUTION - Replacement Meter strategy for IBT as developed in 2015 ($24,052/yr) (P2)	$46	$0	$46	0%	Accepted	$46	$0	0%
0000065148 - CHINCHILLA RIVER DISTRIBUTION - Replacement of Chinchilla Meter Outlets - 2015 IBHStrategy	$23	$0	$23	0%	Accepted	$23	$0	0%
0000067246 - BEN ANDERSON BARRAGE - Reinstate 10 refurbed and build& install 10 new shutters at Ben Anderson Barrage (#2242651)	$306	$0	$306	0%	Accepted. However, Sunwater notes that Figure 21 in AECOM's capex report incorrectly states that the Sunwater expenditure claim is $300k.	$306	$0	0%
0000070052 - EUNGELLA DAM - 19BBR05 Eungella Dam - Replace - BLDBLA - COMPST TOILET BLK - DESTROYED BY FIRE - Replace & Refurb Life Strategy (#956033) (19BBR05)	$229	$0	$229	0%	Accepted	$229	$0	0%
0000074061 - CLARE WEIR - Refurbish Hydraulic System and cylinders - Stage 3	$247	$0	$247	0%	Accepted	$247	$0	0%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
0000075187 - GATTONVALE OFF STREAM STORAGE - 17BBR02 FD01 (2017) Gattonvale OSS - Refurb - EMBK - Inside Batter RIP RAP Replenishment - Conditon Based (Rfr DS Insp Rpt #2288631)	$586	$0	$586	0%	Accepted	$586	$0	0%
0000075973 - BURDEKIN FALLS DAM - 18BDK06 Installation of transformer 12 - Burdekin Falls Dam (carry over)	$124	$0	$124	0%	Accepted	$124	$0	0%
0000076150 - BURNETT RIVER DISTRIBUTION - Replace Meter Program (10 per year) - Burnett River (P2)	$103	$0	$103	0%	Accepted	$103	$0	0%
0000076154 - UPPER BURNETT DISTRIBUTION - Replace Meter Program (11 per year) - Upper Burnett (P2)	$113	$0	$113	0%	Accepted	$113	$0	0%
0000076200 - SILVERLEAF WEIR - Refurbish Silverleaf Weir pending outcome of 2018 options study - stage 1	$940	$0	$940	0%	Accepted	$940	$0	0%
0000076381 - SYSTEM - 16BAL12 Beardmore Dam - Thurragi Channel Repair	$1,338	$0	$1,338	0%	Accepted	$1,338	$0	0%
0000076580 - FAIRBAIRN DAM - Study: Bathymetric survey of Fairbairn Dam (ELT directive - see notes)	$287	$0	$287	0%	Accepted. However, Sunwater notes that Figure 21 in AECOM's capex report incorrectly states that the Sunwater expenditure claim is $280k.	$287	$0	0%
0000076609 - MARY BARRAGE - 16MVA01 Reinstating D/S Rock protection - Mary Barrage (16MVA01)	$397	$0	$397	0%	Accepted	$397	$0	0%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
0000056393 - OWANYILLA PUMP STATION - 20LOW13 Owanyilla PSTN - Refurbish - PUN2-PUMP - PUMP - Replacement & Refurbishment Life Strategy (#956033)	$128	$0	$128	0%	Accepted	$128	$0	0%
0000055946 - VICTORIA PLAINS PUMP STATION - 19ETO06 Victoria Plains PSTN - Replace - PSTN-CNTL - COMPONENT RPLC - ' Options Study Review Report' Doc Ref #2242568 Option #4	$180	$0	$180	0%	Accepted	$180	$0	0%
0000008682 - WEST BARRON DISTRIBUTION - 22MDA01 West Barron BSTR - Refurbish - BSTR-SCRN - ROTATING SCRN - Irrigation Scheme Common Strategy (30Yr Pln) (Item 10.1) (22MDA01)	$47	$0	$47	0%	Accepted. However, Sunwater notes that Figure 21 in AECOM's capex report incorrectly states that the Sunwater expenditure claim is $46k.	$47	$0	0%
0000006363 - OAKENDEN MAIN CHANNEL DISTRIB - 19ETO12 Oakenden MC - Refurbish - RG04-GATE - AVIS GATE - Float Regulating Gate Refurbishment Strategy (#1837279)	$42	$0	$42	0%	Accepted	$42	$0	0%
Systemic issues								
0000069873 - GATTONVALE PUMP STATION - Refurbish Pump 1 - Gattonvale PSTN	$70	$70	$0	100%	Accepted	$0	$70	100%
0000075186 - EUNGELLA DAM - 17BBR04 Eungella Dam - Permanently Isolate River Conduit Intake Tower Base - Refer Opt Sty #2039445 & Cst Est #2301154	$673	$227	$445	34%	Accepted	$445	$227	34%
0000076265 - BURDEKIN FALLS DAM - 18BDK08 - Study: 20yr Dam Safety Review -Burdekin Falls Dam (2018-2020 Project)	$146	$25	$120	17%	Accepted	$120	$25	17%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
Project specific adjustments								
0000065103 - DAWSON RIVER DISTRIBUTION - Meter Replacement - Dawson Valley (7 per year) (P2)	$85	$33	$52	39%	Accepted	$52	$33	39%
0000076554 - CHINCHILLA WEIR - Study: Develop Recreational Use Storage Management Plan - Chinchilla Weir	$75	$75	$0	100%	Accepted	$75	$75	0%
0000076177 - BEN ANDERSON BARRAGE - Reinstate 10 refurbed and build& install 10 new shutters at Ben Anderson Barrage (#2242651) (19BUN10)[1]	$386	$137	$249	35%	Sunwater accepts the proposed reduction to this project, given part of the forecast costs included costs associated with an investigation and design review which was undertaken in 2017/18. However, we do not believe this is evidence of a systemic issue. Sunwater also notes that the Sunwater expenditure claim in Appendix B of AECOM's capex report of $383k is incorrect. As a result, the AECOM-recommended adjustment has been miscalculated. The AECOM-recommended amount in Appendix B is $249k, which means the adjustment should be $137k (not $133k).	$386	$137	35%
Total (All projects reviewed)	**$8,935**	**$568**	**$8,367**	**6.4%**		**$8,579**	**$568**	**6.4%**
Project specific adjustments	**$160**	**$108**	**$52**	**1.2%**		**$513**	**$245**	**2.7%**
Adjustments for systemic issues		**$460**		**5.1%**			**$323**	**3.6%**

1. Identified as a systemic issue in AECOM's capex report.

Table C3: Response to reviewed historical flood damage projects ($ million)

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	% deduction
Prudent and efficient							
13LFZ07 - FD01 (2012) Eden Bann Repair and Desilt the Fishlock to make it operable after February 2012 flood	$0.49	$0.00	$0.49	0.0%	Accepted	$0.49	0.0%
12NMA08 - FD01 (2011) Tartrus Weir Flood Damage Repairs - Erosion & Protection Works	$0.23	$0.00	$0.23	0.0%	Accepted	$0.23	0.0%
Project specific adjustments							
12SGA24 - FD01 (2012) - Moolabah Weir - Dam Break & Upgrade Construction	$0.64	$0.04	$0.60	6.3%	Sunwater notes that 40% of the increase in costs attributed to additional concrete and associated pumping was driven by larger than expected voids. These voids could not have been foreseen at the time of preparing the scope, suggesting the AECOM-recommended adjustment may be overstated.	$0.60	6.3%
16BYR07 - Boondooma Dam Spillway Repairs Project Insurance Claim	$0.59	$0.59	$0.00	100.0%	Not accepted. The insurance claim has now been resolved and we expect the QCA to update its final decision to include net costs in the respective annuity.	$0.59	0.0%
Total (All projects reviewed)	**$1.95**	**$0.63**	**$1.32**	**32.3%**		**$1.91**	**2.1%**

Appendix D – Forecast renewals projects

This appendix contains Sunwater's response on each of the forecast renewals projects sampled by the QCA's consultant, AECOM, in the price path period and beyond the price path period.

Table D1: Response to reviewed forecast price path period renewals projects ($2018/19, $'000)

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
Prudent and efficient								
0000001332 - BURDEKIN FALLS DAM - Study: 5yr Dam Comprehensive Inspection (by 1 June, includes $5k for elec. insp.), see notes.	$110	$0	$110	0%	Accepted	$110	$0	0%
0000006888 - SYSTEM - Study: 5yr Dam Comprehensive Inspection (by 1 Dec 2020	$76	$0	$76	0%	Accepted	$76	$0	0%
0000008492 - TINAROO DAM - Study: 5yr Dam Comprehensive Inspection (by Dec,See notes.)	$158	$0	$158	0%	Accepted	$158	$0	0%
0000008908 - UPPER CONDAMINE DISTRIBUTION - Replacement meter program as per 2015 UCO strategy ($41,595 / yr) (P2)	$153	$0	$153	0%	Accepted	$153	$0	0%
0000009475 - COOLMUNDA DAM - Study: 5yr Dam Comprehensive Inspection (by 1 Dec 2020) -Large cost associated with draining dissipator	$130	$0	$130	0%	Accepted	$130	$0	0%
0000009478 - SYSTEM - Study: 5yr Dam Comprehensive Inspection (by 1 Jun 2019)	$118	$0	$118	0%	Accepted	$118	$0	0%
0000048336 - PETER FAUST DAM - Study: 20yr Dam Safety Rview (by 1 Dec 2023) incl. tasks mentioned in notes	$350	$0	$350	0%	Accepted	$350	$0	0%
0000048820 - EDEN BANN WEIR - 15LFZ01 Study: WEIR PROGRAM - 5yr Dam Comprehensive Inspection	$42	$0	$42	0%	Accepted	$42	$0	0%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
0000064557 - KINCHANT DAM - Carry out 5 yearly dam safety inspection - Kinchant dam	$133	$0	$133	0%	Accepted	$133	$0	0%
0000064960 - LESLIE DAM - Replace Crane Control Equipment	$154	$0	$154	0%	Accepted	$154	$0	0%
0000065102 - THREE MOON CK GROUNDWATER DIST - Meter Replacement Three Moon Creek (8 per year) (P2)	$161	$0	$161	0%	Accepted	$161	$0	0%
0000065104 - CALLIDE GROUNDWATER DISTRIB - Meter Replacement (12 per year) - Callide Valley (P2)	$244	$0	$244	0%	Accepted	$244	$0	0%
0000065145 - PROSERPINE RIVER DISTRIBUTION - Replace Meter Program (8 per year) - Proserpine River (P2)	$125	$0	$125	0%	Accepted	$125	$0	0%
0000065147 - MACINTYRE BROOK DISTRIBUTION - Replacement Meter strategy for IBT as developed in 2015 ($24,052/yr) (P2)	$90	$0	$90	0%	Accepted	$90	$0	0%
0000065148 - CHINCHILLA RIVER DISTRIBUTION - Replacement of Chinchilla Meter Outlets - 2015 IBHStrategy	$45	$0	$45	0%	Accepted	$45	$0	0%
0000076150 - BURNETT RIVER DISTRIBUTION - Replace Meter Program (10 per year) - Burnett River (P2)	$201	$0	$201	0%	Accepted	$201	$0	0%
0000076154 - UPPER BURNETT DISTRIBUTION - Replace Meter Program (11 per year) - Upper Burnett (P2)	$222	$0	$222	0%	Accepted	$222	$0	0%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
0000076201 - SILVERLEAF WEIR - Refurbish Silverleaf Weir pending outcome of 2018 options study - stage 2	$1,862	$0	$1,862	0%	Accepted	$1,862	$0	0%
0000076370 - FAIRBAIRN DAM - Complete Last Phase of the Rock Stability work on the rock face on the right abutment adjacent to the Weemah inlet tower.	$487	$0	$487	0%	Accepted	$487	$0	0%
0000076581 - BJELKE-PETERSEN DAM - Study: Bathymetric survey of BjelkePetersen Dam (ELT directive - see notes)	$47	$0	$47	0%	Accepted	$47	$0	0%
Systemic issues								
0000075493 - OAKENDEN MAIN CHANNEL DISTRIB - 21ETO10 Oakenden MC - Replace - ETO-OMC-FMTR - Replace Meter - Material Project (QCA) Control Equip Option Analysis AM11_G04	$159	$117	$42	73%	Accepted	$42	$117	73%
Project specific adjustments								
0000057410 - ALLAN TANNOCK WEIR - Ref:Knock in conc on front face of weir and @ imp rock to prot Zone 1 impervios fill (HB 1323193),weepholes+sealant+rockmatt(DS rec)	$51	$1	$50	2%	Accepted. However, Sunwater notes that Appendix B of AECOM's capex report incorrectly states that the Sunwater expenditure claim is $50,800. The correct amount is $50,592. As a result of this error, the difference to the cost estimate has been miscalculated. The AECOM-	$50	$1	2%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
					recommended adjustment should be $0.99k (not $1.2k).			
0000065103 - DAWSON RIVER DISTRIBUTION - Meter Replacement - Dawson Valley (7 per year) (P2)	$327	$119	$208	36%	Accepted	$208	$119	36%
0000073006 - KINCHANT DAM - Carry out site works to major refurbishment/strengthen (post tensioning) tall slender tower against damage from earthquake	$285	$285	$0	100%	Accepted	$0	$285	100%
Annuities adjustment								
0000072774 - TEEMBURRA DAM - Stabilise bed and banks of the spillway discharge channel subject to dam safety review	$351	$351	$0	100%	Accepted	$0	$351	100%
0000075990 - OWANYILLA PUMP STATION - 24LOW03 Owanyilla PSTN - Replace - ELEC-SWB2 - SWITCHBOARD 2 - Repl & Ref Life Sty (#956033) & Irrig Com Strat (Item 1.1)	$441	$441	$0	100%	Accepted	$0	$441	100%
Total (All projects reviewed)	**$6,523**	**$1,304[1]**	**$5,219**	**20.1%**		**$5,219**	**$1,304**	**20.1%**
Project specific adjustments	**$663**	**$406**	**$258**	**6.2%**		**$258**	**$406**	**6.2%**
Adjustments for systemic issues		**$107**		**1.6%**			**$107**	**1.6%**

1. The timing of the refurbishment program at Gattonvale pump station has been adjusted, resulting in $10,000 of expenditure occurring in the price path period. This reduces the total adjustment by $10,000.

Table D2: Response to reviewed forecast beyond price path period renewals projects ($2018/19, $'000)

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
Prudent and efficient								
0000001060 - BURDEKIN FALLS DAM - Study: 20yr Dam Safety Review - Burdekin Falls Dam (2039)	$141	$0	$141	0%	Accepted	$141	$0	0%
0000001332 - BURDEKIN FALLS DAM - Study: 5yr Dam Comprehensive Inspection (by 1 June, includes $5k for elec. insp.), see notes.	$720	$0	$720	0%	Accepted	$720	$0	0%
0000002872 - SYSTEM - Study: 5yr Dam Comprehensive Inspection (by 1 Dec 2019).	$736	$0	$736	0%	Accepted	$736	$0	0%
0000004935 - BOONDOOMA DAM - Study: 20yr Dam Safety Review - Boondooma Dam (See Notes)	$355	$0	$355	0%	Accepted	$355	$0	0%
0000004992 - WURUMA DAM - Study: 20yr Dam Safety Review - Wuruma Dam	$345	$0	$345	0%	Accepted	$345	$0	0%
0000006501 - EUNGELLA DAM - Study: 20yr Dam Safety Review including anchor pullout test and intrusive inspection (by 30 June 2020)	$385	$0	$385	0%	Accepted	$385	$0	0%
0000006888 - SYSTEM - Study: 5yr Dam Comprehensive Inspection (by 1 Dec 2020	$572	$0	$572	0%	Accepted	$572	$0	0%
0000008492 - TINAROO DAM - Study: 5yr Dam Comprehensive Inspection (by Dec,See notes.)	$875	$0	$875	0%	Accepted	$875	$0	0%
0000008908 - UPPER CONDAMINE DISTRIBUTION - Replacement meter program as per 2015 UCO strategy ($41,595 / yr) (P2)	$1,146	$0	$1,146	0%	Accepted	$1,146	$0	0%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
0000009475 - COOLMUNDA DAM - Study: 5yr Dam Comprehensive Inspection (by 1 Dec 2020) -Large cost associated with draining dissipator	$802	$0	$802	0%	Accepted	$802	$0	0%
0000009478 - SYSTEM - Study: 5yr Dam Comprehensive Inspection Leslie Dam (by 1 Jun 2019)	$651	$0	$651	0%	Accepted	$651	$0	0%
0000048336 - PETER FAUST DAM - Study: 20yr Dam Safety Rview (by 1 Dec 2023) incl. tasks mentioned in notes	$387	$0	$387	0%	Accepted	$387	$0	0%
0000048820 - EDEN BANN WEIR - 15LFZ01 Study: WEIR PROGRAM - 5yr Dam Comprehensive Inspection	$260	$0	$260	0%	Accepted	$260	$0	0%
0000077561 - TINAROO DAM - Testing of post tensioning permanent strand anchors	$674	$0	$674	0%	Accepted	$674	$0	0%
0000058091 - SYSTEM - Study: 20yr Dam Safety Review (by 1 Dec 2019)	$266	$0	$266	0%	Accepted	$266	$0	0%
0000064557 - KINCHANT DAM - Carry out 5 yearly dam safety inspection - Kinchant dam	$848	$0	$848	0%	Accepted	$848	$0	0%
0000064960 - LESLIE DAM - Replace Crane Control Equipment	$167	$0	$167	0%	Accepted	$167	$0	0%
0000065102 - THREE MOON CK GROUNDWATER DIST - Meter Replacement Three Moon Creek (8 per year) (P2)	$1,179	$0	$1,179	0%	Accepted. However, Sunwater notes that Figure 23 in AECOM's capex report incorrectly states that the Sunwater expenditure claim is $1197k.	$1,179	$0	0%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
0000065104 - CALLIDE GROUNDWATER DISTRIB - Meter Replacement (12 per year) - Callide Valley (P2)	$1,828	$0	$1,828	0%	Accepted. However, Sunwater notes that Figure 23 in AECOM's capex report incorrectly states that the Sunwater expenditure claim is $1846k.	$1,828	$0	0%
0000065145 - PROSERPINE RIVER DISTRIBUTION - Replace Meter Program (8 per year) - Proserpine River (P2)	$942	$0	$942	0%	Accepted. However, Sunwater notes that Figure 23 in AECOM's capex report incorrectly states that the Sunwater expenditure claim is $959k.	$942	$0	0%
0000065147 - MACINTYRE BROOK DISTRIBUTION - Replacement Meter strategy for IBT as developed in 2015 ($24,052/yr) (P2)	$655	$0	$655	0%	Accepted	$655	$0	0%
0000065148 - CHINCHILLA RIVER DISTRIBUTION - Replacement of Chinchilla Meter Outlets - 2015 IBHStrategy	$330	$0	$330	0%	Accepted	$330	$0	0%
0000074061 - CLARE WEIR - Refurbish Hydraulic System and cylinders - Stage 3	$426	$0	$426	0%	Accepted	$426	$0	0%
0000076150 - BURNETT RIVER DISTRIBUTION - Replace Meter Program (10 per year) - Burnett River (P2)	$1,469	$0	$1,469	0%	Accepted. However, Sunwater notes that Figure 23 in AECOM's capex report incorrectly states that the Sunwater expenditure claim is $1474k.	$1,469	$0	0%
0000076154 - UPPER BURNETT DISTRIBUTION - Replace Meter Program (11 per year) - Upper Burnett (P2)	$1,620	$0	$1,620	0%	Accepted. However, Sunwater notes that Figure 23 in AECOM's capex report incorrectly states that the Sunwater expenditure claim is $1624k.	$1,620	$0	0%
0000076265 - BURDEKIN FALLS DAM - 18BDK08 - Study: 20yr Dam Safety Review -Burdekin Falls Dam (2018-2020 Project)	$158	$0	$158	0%	Accepted	$158	$0	0%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
0000042409 - WEST BARRON DISTRIBUTION - Replace Syn/Lin Chnl 38142.67-40917.1M	$1,402	$0	$1,402	0%	Accepted	$1,402	$0	0%
0000056393 - OWANYILLA PUMP STATION - 20LOW13 Owanyilla PSTN - Refurbish - PUN2-PUMP - PUMP - Replacement & Refurbishment Life Strategy (#956033)	$135	$0	$135	0%	Accepted	$135	$0	0%
0000006363 - OAKENDEN MAIN CHANNEL DISTRIB - 19ETO12 Oakenden MC - Refurbish - RG04-GATE - AVIS GATE - Float Regulating Gate Refurbishment Strategy (#1837279)	$109	$0	$109	0%	Accepted	$109	$0	0%
Systemic issues								
0000069873 - GATTONVALE PUMP STATION - Refurbish Pump 1 - Gattonvale PSTN	$452	$412	$40	91%	Accepted. However, Sunwater notes that Appendix B of AECOM's capex report has rounded the Sunwater expenditure claim down to $451k. As a result, the AECOM-recommended adjustment is understated by $0.54k.	$40	$412	91%
0000076329 - SYSTEM - 24BIA20 Isis System - Refurbish - BIA-ISIS - ISIS - Irrigation Common Strategy Concrete Ch (30Yr Pln) (Item 2.0)	$2,188	$1,202	$986	55%	Not accepted. AECOM has made two fundamental errors in reaching its conclusion that this project is inefficient. First, AECOM has miscalculated the five-yearly allocation. Second, AECOM has miscalculated the total Sunwater valuation of the project and assumed that it must have included unlined earth channels. We also note that, in addition to the errors which found the project to be inefficient, Figure 23 of AECOM's capex	$2,188	$0	0%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
					report contains an incorrect adjustment amount sourced from Appendix B. Appendix B included an adjustment for 2053/54, which is outside of the planning period. These errors are discussed in Chapter 4 of this submission.			
0000014241 - MILLAROO IRRIGATION DISTRIB - Replace Concrete Lining	$1,321	$768	$552	58%	Accepted	$552	$768	58%
0000008682 - WEST BARRON DISTRIBUTION - 22MDA01 West Barron BSTR - Refurbish - BSTR-SCRN - ROTATING SCRN - Irrigation Scheme Common Strategy (30Yr Pln) (Item 10.1)	$241	$98	$143	41%	Accepted	$143	$98	41%
Project specific adjustments								
0000065103 - DAWSON RIVER DISTRIBUTION - Meter Replacement - Dawson Valley (7 per year) (P2)	$2,450	$942	$1,508	38%	Accepted. However, Sunwater notes that Figure 23 of AECOM's capex report incorrectly states that Sunwater's expenditure claim is $2467k. As a result, the AECOM-recommended adjustment has been overstated.	$1,508	$942	38%
Annuities assessment								
0000072774 - TEEMBURRA DAM - Stabilise bed and banks of the spillway discharge channel subject to dam safety review	$293	$293	$0	100%	Accepted	$0	$293	100%
0000042159 - WEST BARRON DISTRIBUTION - Replace Pipe Cherry Ck Siphon	$6,722	$6,722	$0	100%	Accepted	$0	$6,722	100%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
0000015276 - TOM FENWICK PUMP STATION 4/5 - Replace Reduction Gearbox	$1,068	$529	$539	50%	Accepted	$539	$529	50%
0000015210 - TOM FENWICK PUMP STATION 2/3 - Replace Pump No.2	$1,903	$1,903	$0	100%	Accepted	$0	$1,903	100%
0000030670 - ISIS DISTRIBUTION - Replace Pipe From 1535.00 To 5250.74M	$1,399	$1,399	$0	100%	Accepted	$0	$1,399	100%
0000030689 - DON BEATTIE PUMP STATION - Replace Common Control System STG I	$784	$0	$784	0%	Accepted	$784	$0	0%
0000025738 - MONDURAN PUMP STATION - Replace Pump	$886	$0	$886	0%	Accepted	$886	$0	0%
0000015726 - CLARE IRRIGATION DISTRIBUTION - Replace Pipeline 1352.0 - 4307.0	$1,429	$1,429	$0	100%	Accepted. However, Sunwater notes that Figure 23 in AECOM's capex report incorrectly states that the Sunwater expenditure claim is $1394k.	$0	$1,429	100%
0000015177 - TOM FENWICK PUMP STATION 1 - Replace H V Switchboards	$538	$0	$538	0%	Accepted	$538	$0	0%
0000055946 - VICTORIA PLAINS PUMP STATION - 19ETO06 Victoria Plains PSTN - Replace - PSTN-CNTL - COMPONENT RPLC - ' Options Study Review Report' Doc Ref #2242568 Option #4	$335	$0	$335	0%	Accepted. However, Sunwater notes that Figure 23 in AECOM's capex report incorrectly states that the Sunwater expenditure claim is $327k.	$335	$0	0%
0000045622 - ARRIGA DRAINAGE - Replace Earth Drain 1845.00-3765.00M	$340	$340	$0	100%	Accepted	$0	$340	100%
0000042132 - WEST BARRON DISTRIBUTION - Replace Scour Valve 1275.59M	$119	$0	$119	0%	Accepted	$119	$0	0%

Sampled project	Sunwater proposal	Adjustment	AECOM recommended	% deduction	Sunwater response	Sunwater recommended	Sunwater adjustment	% deduction
Total (All projects reviewed)	$42,050	$15,594[1]	$26,456	37.1%		$27,658	$14,392	34.2%
Project specific adjustments	$2,450	$942	$1,508	2.2%		$1,508	$942	2.2%
Adjustments for systemic issues		$2,480		5.9%			$1,277	3.0%

1. The timing of the switchboard replacement program at Owanyilla pump station has been adjusted, resulting in $440,600 of expenditure occurring in the planning period. This reduces the total adjustment by $440,600.

sunwater

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