Queensland Competition Authority

Draft Report

SEQ Bulk Water Price Path 2015-18

November 2014

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SUBMISSIONS

Closing date for submissions: 30 January 2015

This report is a draft only and is subject to revision. Public involvement is an important element of the decision-making processes of the Queensland Competition Authority (QCA). Therefore submissions are invited from interested parties concerning its assessment of bulk water prices in southeast Queensland. The QCA will take account of all submissions received.

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

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PREAMBLE

The Queensland Competition Authority recommends a draft bulk water price of $2.77/kL in 2017-18 for all council areas in south east Queensland other than Redland, Sunshine Coast and Noosa. This 2017-18 'common price' is 14%, or $0.45, lower than the 'indicative' common price announced by the government in 2013 ($3.22/kL).

Prices for Redland, Sunshine Coast and Noosa reach the common price in 2019-20.

The lower common price reflects savings resulting from the amalgamation of SEQ bulk water entities and reviews by both Seqwater and the QCA of prudent and efficient costs over 2013-28.

For some councils, bulk water prices are recommended to decrease in 2015-16. For all councils increases are lower than previously indicated.

Seqwater has limited capacity to carry revenue shortfalls or cost overruns. A review of prices may therefore be required before the end of the 2015-18 regulatory period. If so, the need for and timing of any review should determined by the government.

Seqwater's planning policies and procedures, while at an early level of maturity due to the recent merger of south east Queensland bulk water entities, are now largely in place. Further opportunities for improvement have been identified.

Another review should be scheduled to reset prices after 2017-18 as future demand becomes clearer and further opportunities for cost savings are identified. The government may wish to consider whether future reviews should be broadened to include the tariff structure, rate of return and demand forecasts.

EXECUTIVE SUMMARY

Introduction

This is the first review of Seqwater's bulk water prices conducted by the Queensland Competition Authority (QCA) since Seqwater became a consolidated bulk water entity. Seqwater was merged with LinkWater and the south east Queensland (SEQ) Water Grid Manager on 1 January 2013.

Seqwater is responsible for providing bulk urban and industrial water supply and irrigation supply services in SEQ. Services provided to irrigation customers, power stations and Toowoomba are not the subject of this review.

Ministerial Direction

The Minister's Referral Notice (the Referral) under section 23 of the *Queensland Competition Authority Act 1997* requires the QCA to:

- recommend bulk water prices for the remaining three years (2015-18) of the 10-year bulk water price path for 11 council areas in SEQ
- ensure that the price for each council area, except Redland, Sunshine Coast and Noosa, increases so that all council areas pay the same price from 2017-18 (the 'common price')
- recommend the price path and impact on bulk water debt of extending the price path arrangements for Redland, Sunshine Coast and Noosa by two years.

The QCA's recommended prices must provide Seqwater with sufficient revenue to recover prudent and efficient costs incurred between 1 July 2008 and 30 June 2028 and repay price path debt by 2027-28.

Under the Referral the QCA is required to accept:

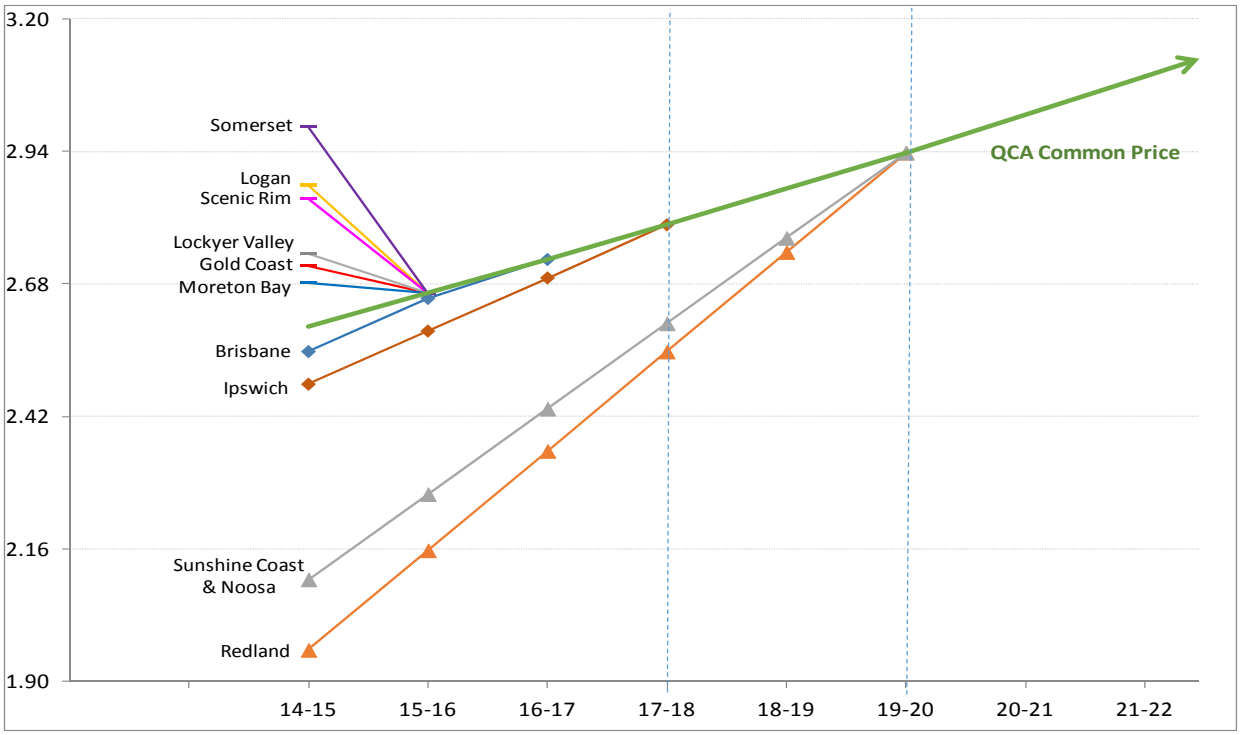
- the regulated asset base (as at 30 June 2013) and price path debt (as at 1 July 2013) advised by the Minister for Energy and Water Supply
- the cost of debt advised by the Queensland Treasury Corporation (QTC)
- Seqwater's demand forecasts provided these reflect specified residential and non-residential demand.

Recommended prices

The QCA recommends a draft common price of $2.77/kilolitre (kL) in 2017-18 (for councils other than Redland, Sunshine Coast and Noosa). The QCA's common price is 14%, or $0.45, lower than the 'indicative' common price announced by the government in 2013 ($3.22/kL).

For each council area, a comparison of prices announced by the government in 2013 with those recommended by the QCA appears in Chapter 7. The bulk component of water bills will be commensurately lower than previously indicated.

Figure 1 Recommended draft bulk water price path ($/kL)



Source: QCA calculations

Costs

Seqwater's proposed costs are below those adopted by government when setting prices in 2013, due to savings in total costs of 8.1% following mainly from:

- lower operating costs (14.1% lower over 2013-28), following mainly from the amalgamation of the bulk water entities and Seqwater's subsequent consolidation of activities and self-imposed savings targets
- lower capital costs, including a lower rate of return (5.9% for 2013-15 and 6.25% for 2015-28 as against 6.50% for 2013-28).

In addition, the QCA has recommended further reductions to Seqwater's estimates of total bulk water costs of 2.5% over 2013-28. The QCA notes that many of its proposed reductions reflect insufficient justification available at the time of the review rather than evidence of inefficiencies. For the purpose of the draft report the QCA has not sought to apply prospective productivity gains and targets.

Policies and procedures

Seqwater's governance arrangements, while at an early level of maturity due to the early 2013 merger of SEQ bulk water entities, are now largely in place.

An area for improvement in capital planning includes the need for a longer-term focus. For operating program planning, improved awareness of policies and procedures and strengthened linkages between KPIs and corporate priorities are recommended.

Volume and cost risks

Seqwater has limited opportunity to respond operationally to volume and cost risks and limited capacity to carry revenue shortfalls or cost overruns.

Under-recovery of revenues or cost overruns could therefore require Seqwater to seek to have prices reviewed (each time a relatively small risk event occurs), reduce accumulated reserves, access redraw facilities with the QTC, seek government approval to increase debt or have shortfalls funded from budget.

The appropriateness of these responses is a matter for government. The QCA has therefore recommended that the need for a mid-price path review be determined by the government (rather than setting a quantitative threshold).

Approach for reviews of expenditure

To ensure that the government has access to appropriate information, Seqwater should report actual price path debt and cost recovery throughout the price path on a quarterly basis.

Future reviews

The QCA notes that:

- Seqwater's policies and planning processes are still maturing following the merger with LinkWater and the SEQ Water Grid Manager
- Seqwater is due to provide a Water Security Program (WSP) to government in July 2015, which is likely to have implications for capital and operating costs
- the rebound of water demand from drought levels is expected to be coming to an end.

Seqwater's estimates of costs and revenues should therefore improve in coming years.

This suggests that another review should be scheduled to reset prices after 2017-18. The government may wish to consider whether future reviews should be broadened to include the tariff structure, rate of return and demand forecasts.

Draft recommendations

Table 1 QCA draft recommendations

Chapter	*Topic*	*No*	*Draft recommendations*
Capital costs	Capital planning and delivery	4.1	Seqwater improve capital planning and delivery policies and procedures by further progressing from a short-term to longer-term delivery focus, improve awareness and consistency in their application and incorporate maintenance and non-capital options in asset management planning.
	Summary of capital expenditure adjustments	4.2	Seqwater's forecast capital expenditure for 2013-28 be reduced by $321.0 million.
Operating costs	Policies and procedures	5.1	Seqwater continue to improve its governance, corporate planning and procurement activities by improving awareness of their requirements and strengthening linkages between KPIs and corporate priorities.
	Operating cost summary	5.2	Seqwater's forecast operating expenditure for 2013-28 be reduced by $286.1 million.
Total costs	Total costs	6.1	Bulk water prices reflect total costs of $14.2 billion over 2013-28.
Prices	The common price	7.1	A common price of $2.77/kL apply in 2017-18 (and increase thereafter by CPI) for all council areas except Redland, Sunshine Coast and Noosa.
	Price path for Brisbane and Ipswich	7.2	The bulk water price for Brisbane increase by 3.6% in 2015-16 (and thereafter by CPI). The price for Ipswich increase by an average of 3.7% per

Chapter	*Topic*	*No*	*Draft recommendations*
			annum to 2017-18 (and thereafter by CPI).
	Price path for Somerset, Logan, Scenic Rim, Lockyer Valley, Gold Coast and Moreton Bay	7.3	Bulk water prices in 2015-16 fall for Somerset (11.7%), Logan (8.2%), Scenic Rim (7.3%), Lockyer Valley (3.7%), Gold Coast (2.8%), Moreton Bay (1.6%) (and increase thereafter by CPI).
	Price path for Redland, Sunshine Coast and Noosa	7.4	The bulk water prices increase for Redland (by an average of 8.2% per annum), Sunshine Coast (by an average of 6.8% per annum) and Noosa (by an average of 6.8% per annum) to the common price in 2019-20 (and thereafter by CPI).
Future reviews	Managing volume and cost risks	8.1	Where Seqwater can demonstrate that it is unable to manage the impact of unexpected changes to water demand or supply which causes a change in revenue or prudent and efficient costs: (a) a material change be eligible for a mid-price path review (b) where not subject to a mid-price path review, the change be recouped by an end-of-period adjustment.
		8.2	Any unexpected changes to capex be addressed during an end-of period review, and be subject to an assessment of prudency and efficiency.
		8.3	Seqwater bear operating cost risks other than those related to Review Events.
		8.4	Where Seqwater can demonstrate that it is not at fault for an emergency event which causes a change in revenue, or prudent or efficient costs: (a) a material change be eligible for a mid-price path review (b) where not subject to a mid-price path review, the change be recouped by an end-of-period adjustment.
		8.5	Where the impact of law or government policy on bulk water prices is unambiguous, it be automatically passed through by Seqwater to customers.
		8.6	Where Seqwater can demonstrate that it is unable to manage the impact of law or government policy on bulk water prices which causes a change in revenue, or prudent and efficient costs: (a) a material change be eligible for a mid-price path review (b) where not subject to a mid-price path review, the change be recouped by an end-of-period adjustment.
		8.7	Where Seqwater can demonstrate that it is unable to manage the impact of feedwater quality which causes a change in revenue, or prudent and efficient costs: (a) a material change be eligible for a mid-price path review (b) where not subject to a mid-price path review, the change be recouped by an end-of-period adjustment.
		8.8	Seqwater recover the cost of debt advised by QTC.
	Mid-price path reviews	8.9	The need for a mid-price path review be determined by the government.
	Approach for reviews of expenditure	8.10	Seqwater report the actual price path debt and cost recovery position on a quarterly basis to QTT and DEWS.
		8.11	Seqwater may apply to the government for a mid-price path review if changes in revenues and costs impact on estimated 2020-21 prices.

Chapter	*Topic*	*No*	*Draft recommendations*
	Future reviews	8.12	A future review of Seqwater's expenditures be completed by 30 April 2018.
		8.13	The government consider whether the scope of future reviews should broaden to include matters such as tariff structure, rate of return and demand forecasts.
		8.14	The next scheduled review include an end-of-period adjustment for prudent and efficient costs and actual revenues.
		8.15	The end-of-period review only reconcile costs and revenues that correspond to risks borne by customers.

1 INTRODUCTION

1.1 Minister's Referral Notice

Under the Minister's Referral Notice (Referral) (**Appendix A**), the Queensland Competition Authority (QCA) must recommend bulk water prices for the remaining three years (2015-18) of the 10-year bulk water price path.

Bulk water prices are required for 11 council areas in south east Queensland (SEQ).

In recommending bulk water prices, the QCA is to:

- ensure that the price for each council area in SEQ, except Redland, Sunshine Coast and Noosa, increases so that all councils pay the same price from 2017-18 (the 'common price')
- recommend the price path and impact on bulk water debt of extending the price path arrangements for Redland, Sunshine Coast and Noosa by two years.

Prices are to be volumetric only and remain constant in real terms from when the common price has been reached until 2027-28.

The QCA is also required to ensure that the recommended prices provide Seqwater with sufficient revenue to recover prudent and efficient costs incurred from providing bulk water supply services (that is, the delivery of treated bulk water) between 1 July 2008 and 30 June 2028 and repay 'price path debt' by 2027-28.

1.2 Previous reviews

The QCA last reviewed the bulk water sector in SEQ in 2012-13 to recommend Grid Service Charges (GSCs) for the (then) Grid Service Providers of Seqwater and LinkWater. The Queensland Government then set the bulk water price.

Since that QCA review, bulk water supply arrangements in SEQ have been restructured with the merger of LinkWater (which previously owned and operated bulk transport assets) and the SEQ Water Grid Manager (which previously held contracts to provide potable and purified recycled water to retailers and power stations) with Seqwater.

1.3 Bulk water prices

The initial bulk water price path set in 2008 allowed for an annual increase of $0.30 per kL (or $59 for a household using 200 kL of water a year). Reviews of this increase have occurred since, as follows:

- In 2010 the annual increase was reduced to $0.27 per kL (or $54 for a household using 200kL) for 2011-12 and 2012-13.
- In 2013, the annual increase was reduced to $0.25 per kL (or $49 for a household using 200kL) for 2013-14 and 2014-15.

1.4 Approach

To establish prices, the QCA has reviewed capital and operating costs. The review seeks to establish whether Seqwater's forecast costs are genuinely required (prudent) and as low as possible (efficient). In doing so, the QCA has engaged the assistance of an independent

consultant, CH2M HILL. The resulting estimates of prudent and efficient capital and operating costs form the basis of the QCA's assessment of total costs.

The QCA's recommended prices are the minimum required for Seqwater to recover its prudent and efficient costs and meet the requirements of the Referral.

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

1.5 Consultation

QCA has consulted extensively, invited submissions and considered all submissions received in preparing this draft report.

To facilitate the review, the QCA has:

- invited submissions from interested parties
- met with stakeholders to identify and discuss relevant issues
- commissioned independent consultants to review costs
- published all reports and submissions on its website.

Under section 26 of the QCA Act, the QCA must have regard to a range of related matters. Where relevant, these have been taken into account.

Submissions in response to the Draft Report are invited from all interested parties by **30 January 2015**.

1.6 Seqwater's submission

Seqwater provided its submission to the QCA on 31 July 2014. The submission contains a detailed description of Seqwater's operating environment and forecast costs.

Following the finalisation of its 2013-14 actual financial results, Seqwater provided a revised submission (26 September 2014) incorporating changes to forecast capital and operating expenditure. Since its September submission Seqwater has identified some further savings to operating costs.

1.7 Structure of report

This report incorporates a brief description of Seqwater (Chapter 2) followed by a summary of Seqwater's demand forecasts (Chapter 3).

The assessment of the prudency and efficiency of Seqwater's capital costs (Chapter 4) and operating costs (Chapter 5) inform recommended total costs (Chapter 6) and prices (Chapter 7).

Finally, the QCA discusses the circumstances under which a review of prices and expenditure should be triggered, and the approach to future reviews (Chapter 8).

2 SEQWATER

2.1 Assets

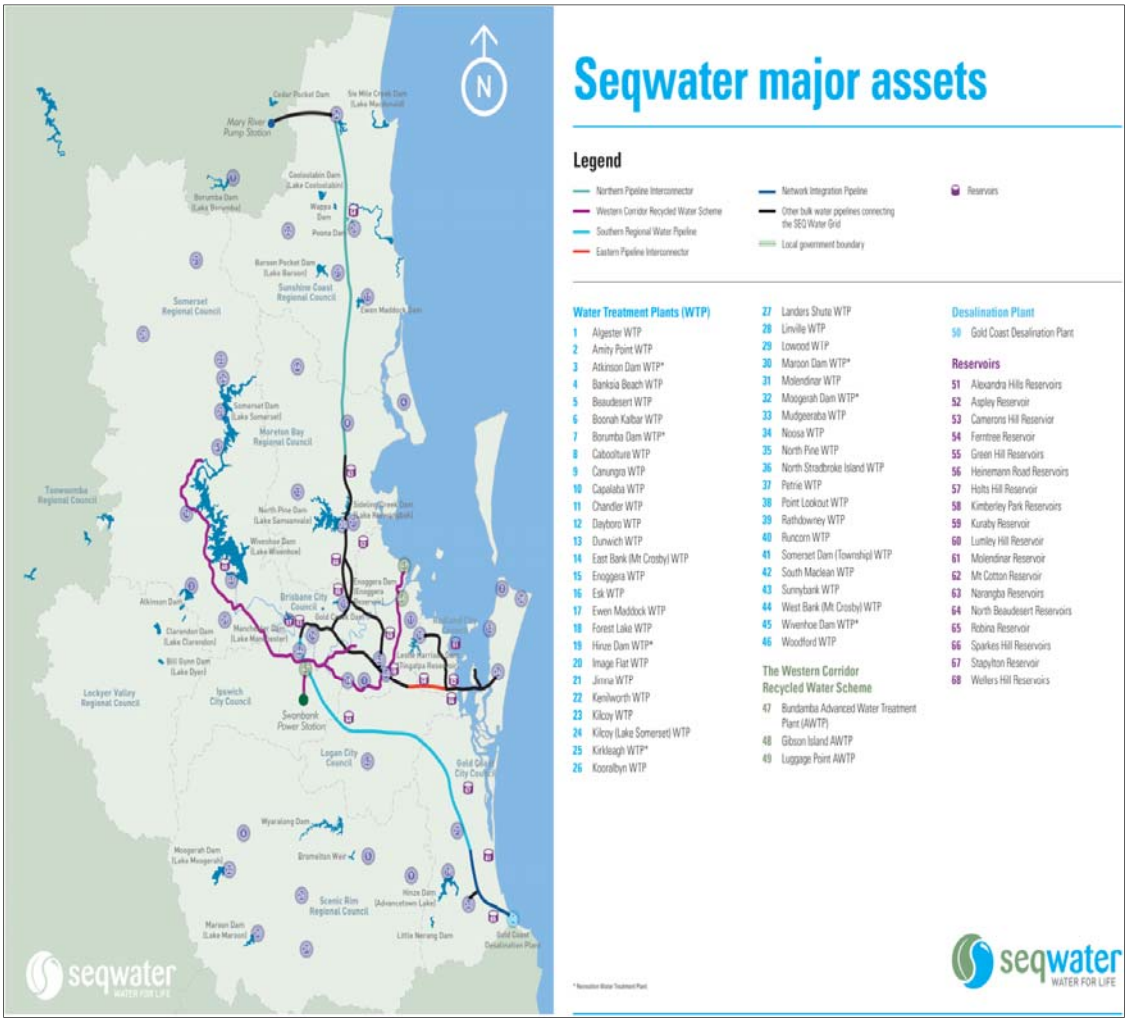
Seqwater's network of bulk water supply assets stretches from Noosa on the Sunshine Coast in the north to Tugun on the Gold Coast in the south, and from North Stradbroke Island in the east to Gatton in the west.

Seqwater owns and operates 26 dams, 46 water treatment plants (WTPs), 47 weirs and 14 bores and aquifers, which supply up to 90% of SEQ's drinking water (Seqwater 2014a).

Following the 2013 merger with LinkWater, Seqwater now also owns and operates a 600-kilometre bulk water pipeline network.

Seqwater also owns the Western Corridor Recycled Water Scheme (WCRWS) and the Gold Coast Desalination Plant (GCDP). The location of Seqwater's major assets is shown below.

Figure 2 Seqwater's network of assets



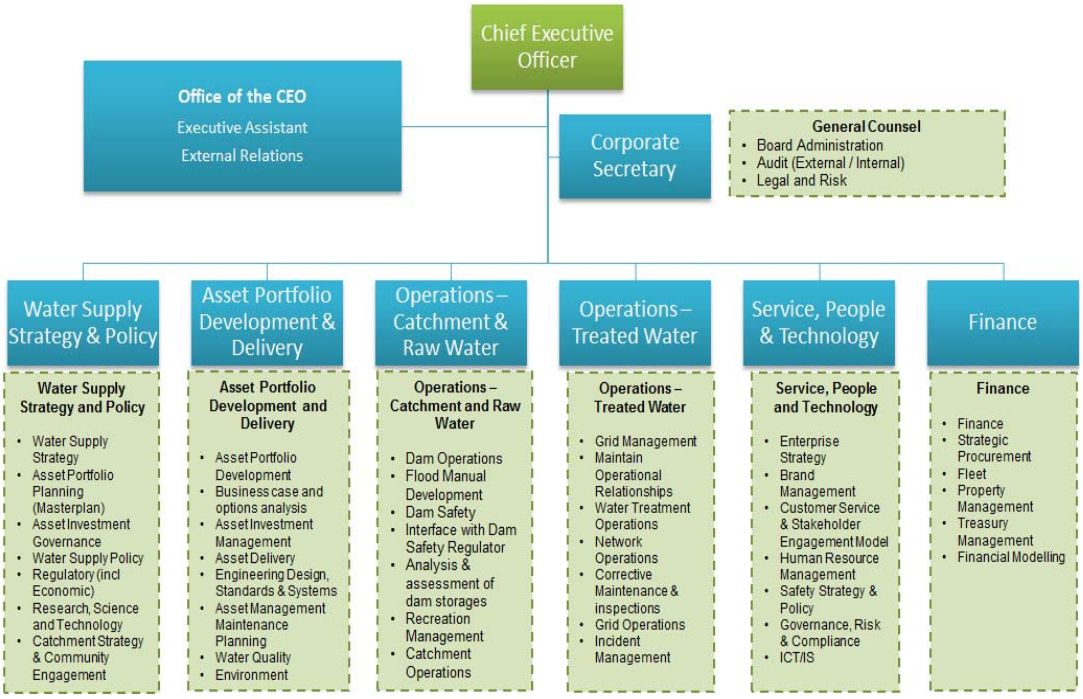
Source: Seqwater (2014a).

2.2 Roles and responsibilities

Seqwater is made up of seven groups which undertake a range of operational and functional support roles. Each group is led by a general manager who is accountable for the outputs and functions of the group. Each group consists of teams led by managers responsible for delivery.

Further organisational changes are being considered.

Figure 3 Seqwater's organisational structure



Source: Seqwater (2014a)

The responsibilities and activities of these groups can be summarised as follows:

- The Office of the Chief Executive Officer is responsible for business leadership and managing and coordinating Seqwater's external relations function.
- Water Supply Strategy and Policy (WSSP) is responsible for establishing the medium to long term water supply strategy and policy direction for Seqwater. It establishes service needs (including investment) and has a degree of independence from operational groups thereby enabling it to challenge and review proposed investment options for meeting service needs.
- Asset Portfolio Development and Delivery (APDD) is responsible for the planning and delivery of the infrastructure capital investment program. It translates Seqwater's strategic objectives into tangible plans at the asset level and delivers these investments.
- Operations – Catchments and Raw Water is responsible for managing all of Seqwater's dams, catchments and recreational areas.
- Operations – Treated Water is the largest group in Seqwater and is responsible for the operation and maintenance of all treated water supply assets owned by Seqwater.
- Service, People and Technology (SPT) is responsible for human resource, organisational culture, brand, workplace health and safety, and information technology.

- The Corporate Finance Group is responsible for accounting, procurement and land, fleet and facility assets. It is also responsible for management of Seqwater's debt, including the relationship with the Queensland Treasury Corporation (QTC).
- The General Counsel Group is responsible for all governance, risk and compliance, audit and legal services provision.

2.3 Service and regulatory obligations

Service provision

Seqwater is a registered service provider under the *Water Supply (Safety and Reliability) Act 2008* (WSSR Act), with responsibility for providing water supplies from the catchments and schemes below.

Table 2 Seqwater's water supply catchments and schemes

Catchments	
Mary Valley	Warrill Valley
Mooloolah River	Lower Brisbane River
Maroochy River	Tingalpa Creek
Caboolture River	Logan / Albert Rivers
North Pine River	Nerang River
Upper Brisbane River	Brisbane Groundwater
Stanley River	Bribie Island Groundwater
Lockyer Valley (Upper, Central, Lower)	North Stradbroke Island Groundwater
Schemes – Manufactured Water	
WCRWS	GCDP
Schemes – SEQ Water Supply Grid	
South East Queensland Water Grid (various regions)	Southern Regional Water Pipeline
Northern Pipeline Interconnector	Network Integration Pipeline (Gold Coast)
Eastern Pipeline Interconnector	

Source: Seqwater (2014a)

Seqwater's provision of bulk urban water supply and irrigation supply services is governed by Interim Resource Operations Licenses and by contractual arrangements with customers through the Bulk Water Supply Code and contracts with agricultural users.

Regulatory obligations relating to water supply services

Seqwater's regulatory obligations include meeting water supply security and reliability requirements and water quality requirements.

These obligations derive from a number of legislative and regulatory instruments including the SEQ System Operating Plan (SOP), the WSSR Act, the Australian Drinking Water Guidelines (ADWG) 2011, Bulk Water Supply Agreements (Supply Agreements), the Bulk Water Supply Code, operating protocols and the Statement of Obligations.

Water supply security and reliability

The SEQ SOP outlines the regional supply security requirements for the SEQ bulk water supply system including level of service (LOS) objectives and operating rules.

Seqwater's LOS objectives under the SOP are as follows:

- During normal operations sufficient water will be available to meet an average total urban demand of 375 litres per person per day (including residential, non-residential and system losses), of which 230 litres per person per day is attributed to residential demand.
- Medium level restrictions will not occur more than once every 25 years on average.
- Medium level restrictions need only achieve a targeted reduction in consumption of 15 per cent below the total consumption volume in normal operations.
- The frequency of triggering drought response infrastructure will be no more than once every 100 years, on average.
- The total volume of water stored by all key SEQ bulk water supply system storages will not decline to 10 per cent of their combined water storage capacity more than once every 1,000 years, on average.
- The total volume of water stored by all key SEQ bulk water supply system storages will not decline to 5 per cent of their combined total water storage capacity more than once every 10,000 years, on average.
- Wivenhoe, Hinze and Baroon Pocket dams must not be permitted to reach minimum operating levels.
- It is expected that medium level restrictions will last longer than six months no more than once every 50 years, on average.

These LOS objectives in the SOP were current at the time of Seqwater's submission. The QCA notes that Seqwater's forecast costs were based on the requirements of the Referral relating to demand (185 litres per person per day for residential demand and 91 litres per person per day for non-residential customers).

The government has since prescribed new LOS objectives which Seqwater must incorporate by July 2015 into a Water Security Program (WSP). The new LOS objectives supersede the SOP, and are as follows:

- The bulk water supply system is able to supply enough water to meet the projected regional average urban demand (which Seqwater must work out, in collaboration with the SEQ service providers, and assess annually for currency).
- Medium level restrictions on residential water use (and non-residential water use that is incidental to the purpose of a business) will not occur more than once every 10 years on average.
- Medium level restrictions on residential water use will not restrict the average water use for the SEQ region to less than 140 litres per person per day.
- The bulk water supply system will be able to supply the essential minimum supply volume (that is, 100 litres per person per day).
- The bulk water supply system will not be reduced to being able to supply only the essential minimum supply volume more than once in every 10,000 years on average.

- Wivenhoe, Hinze and Baroon Pocket dams will not reach their minimum operating level more than once in every 10,000 years on average.
- Medium level restrictions on residential and non-residential water use are expected to last no longer than one year on average.

Seqwater has indicated that it is preparing a WSP, due in July 2015, which will incorporate the new LOS objectives.

Other regional supply security requirements relevant to Seqwater include that:

- Seqwater may only enter into contracts to sell a maximum volume of water of 470 gigalitres per annum
- Seqwater's annual operations plan must demonstrate that all reasonable actions have been taken to achieve the risk criteria outlined below.

Table 3 Risk criteria to be addressed by annual operations plan

Volume of water stored by key SEQ dams	*Probability of reaching volume of water stored*		
	Within one year	*Within three years*	*Within five years*
40%	Less than 0.2%	Not specified	Less than 5%
30%	Not specified	Less than 0.5%	Less than 1%

Source: Seqwater (2014a)

Water quality

Under the WSSR Act, Seqwater must:

- not carry out a drinking water service unless there is an approved drinking water quality management plan (DWQMP) to protect public health
- prepare, implement and comply with the approved DWQMP
- regularly review the DWQMP to ensure the plan remains relevant
- report to the Queensland Water Supply Regulator on non-compliances with water quality criteria and for certain prescribed incidents.

Water quality criteria used for the assessment of compliance with the DWQMP are based on health-related guidelines in the ADWG and standards of the Public Health Regulation 2005.

Seqwater deals with aesthetic water quality issues on a case by case basis, taking into account previous supplies, existing community expectations and the aesthetic guidelines in the ADWG.

Seqwater's Supply Agreements set out Seqwater's quality obligations.

Other regulatory obligations

As owner, manager and operator of the SEQ bulk water supply system, Seqwater is also responsible for:

- operating and maintaining flood mitigation infrastructure and undertaking flood operations and emergency management
- dam safety
- managing the catchments which surround its water sources

- recreational facilities and services
- planning for long term water supply for the region, including for growth.

There are legislative and regulatory obligations which relate to these activities and, more generally, to the operations of Seqwater as a business and statutory authority. They include workplace health and safety, laws relating to land ownership, the protection of the environment and cultural heritage, complying with Water Resource Plans, Resource Operations Plans, Resource Operations Licences, and the terms and conditions of water entitlements, preparing and complying with flood mitigation manuals.

2.4 Interim operating strategy

Seqwater is preparing a whole of system integrated plan through the development of the WSP due in July 2015. However, for the purpose of its submission to the QCA, Seqwater has developed an interim 15-year system operating strategy.

The Bulk Water Supply System Interim Operating Strategy 2014-2029 (Seqwater 2014b) (Interim Operating Strategy) seeks to minimise major capital investment and variable operating costs by utilising existing assets subject to system constraints (Seqwater 2014a).

Some of the key outcomes from the Interim Operating Strategy include:

- Petrie WTP to be decommissioned within the next five years with supply being provided via the Northern Pipeline Interconnector
- for the Beaudesert WTP a pipeline connection has been incorporated in bulk water supply system modelling
- North Pine WTP to be upgraded to 250 megalitres per day (ML/d) (24 hour capacity) in 2021-22 as per current long term planning report
- Mt Crosby Westbank WTP to be upgraded to 350 ML/d (24 hour capacity) in 2026-27 as per current long term planning report.

The upgrades to the Mt Crosby and North Pine WTPs are to meet peak monthly demands.

Seqwater has indicated that it will investigate its projections more fully in its WSP once the revised LOS requirements have been determined.

Seqwater's compliance with the LOS objectives, as they existed at 30 June 2014, is outlined below under current and projected demand scenarios.

Table 4 Compliance with LOS objectives

LOS Objective	*Compliance under 2014 levels of demand*	*Compliance under 2029 levels of demand*
Medium level restrictions will not occur more than once every 25 years (that is, where the 12 largest storages fall below 40% of their combined capacity)	1 in 445	1 in 40
The frequency of triggering drought response infrastructure will be not more than once every 100 years (that is, where the 12 largest storages fall below 30% of their combined capacity)	1 in 35,663	1 in 293
All key SEQ storages will not decline to 10% of their combined capacity more than once every 1,000 years	NA[1]	NA[1]
All key SEQ storages must not be permitted to reach 5% of their combined capacity	NA[1]	NA[1]

Note 1: NA means the simulation did not return any instance where the relevant trigger or storage levels were reached. Source: Seqwater (2014a)

Western Corridor Recycled Water Scheme

Under the operating rules in the SOP, once the volume of water stored by the key bulk water storages falls below 40%, the supply of purified recycled water from the WCRWS is required to be maximised (subject to approvals from the Queensland Water Supply Regulator).

In December 2010, a decision was made by the government to place part of the WCRWS into standby. In June 2013, a decision was made by the government to decommission the WCRWS into care-and-maintenance mode provided all assets are maintained and ensure readiness for restart at capacity when the combined level of the key water storages reach 40%.

The estimated probability of the WCRWS being required in response to the key bulk water storages reaching 40% in the next 10 years is currently around 1% (Seqwater 2014a).

For the purposes of its submission, Seqwater has assumed that the WCRWS will remain in care-and-maintenance mode until 2027-28.

Gold Coast Desalination Plant

The GCDP is in hot standby mode, ready to increase production if and when required to address water quality issues and in the event that key storages reach 60%, as per government direction (Seqwater 2014a). Seqwater intends to utilise the plant as required to meet demand growth and as required to meet emergent situations such as during the floods in 2013.

The projected costs assume that hot standby operations will continue, averaging 3.4 ML/d. Seqwater forecasts that by 2027-28 the GCDP will run at 47 ML/d for approximately two months per year if hot and dry weather conditions occur.

Seqwater has stated that the estimated additional operation requirements for peaks (specifically MDMM) are probability based and will only occur for short periods, if at all. As such, Seqwater has based the operating expenditure for this plant and all other plants on fair-weather operation or average operating conditions.

Operational decision-making

Seqwater's Interim Operating Strategy is used to provide a point-in-time forecast of the operational requirements for the bulk water system. However, day-to-day decision-making about operation of the system occurs through a separate but related regime.

An Annual Operating Strategy (required under the SOP) is established and reviewed every six months to demonstrate how Seqwater intends to meet forecast water demands for the next 12 months having regard to an appropriate balance between security and cost efficiency.

The Annual Operating Strategy is then taken into consideration when developing the Monthly Operating Supply Strategy which takes into account demand variations, the capability of WTPs and any other known variances. A Supply Information Notice is developed for each water retailer advising how and where water will be delivered from for the upcoming month.

2.5 Water security program

In its forthcoming WSP, Seqwater has indicated that it will seek to:

- optimise the use and management of the current asset portfolio to meet service requirements at least cost
- outline the augmentations and demand management measures required to meet growth, water quality and short term continuity of supply requirements
- determine the measures and augmentations required to manage extended supply disruptions from drought.

In order to achieve these requirements, Seqwater expects the WSP to incorporate:

- Demand Management - to identify demand management measures during normal operations, forecasting approaches and assumptions, reasonable reduction in use under restrictions for use in the operations, infrastructure and drought response components
- Systems Operations - to identify system needs for use in the infrastructure and maintenance components and determine when the current system capacity is reached for consideration in the infrastructure component
- Infrastructure - to identify infrastructure needs (renewals and augmentation) including capacity, location and timing and service specifications at the bulk supply point level on which the infrastructure needs are based
- Drought Response - to identify triggers for new infrastructure needs and triggers for demand management leading up to, during, and exiting a drought
- Infrastructure Management and Maintenance - to provide strategic guidance on maintaining the current asset suite for use in more detailed Asset Management Plans, the investment profile and maintenance schedule.

Seqwater expects the WSP to remain a live document and to be developed in an iterative manner informed by hydrologic and hydraulic analyses, system optimisation analyses, supply–demand analyses (including demand forecasting), economic analyses and engineering investigations.

3 DEMAND

3.1 Introduction

The Referral requires the QCA to accept Seqwater's demand forecast, provided this demand forecast includes a long term residential demand of 185 litres per person per day (l/p/d) and a non-residential demand of 91 l/p/d.

The QCA is also to accept the timing of reaching the long term demand forecast advised by Seqwater, as well as demand from power stations and Toowoomba Regional Council.

The demand forecast does not include water use by other customers across SEQ (Toowoomba Regional Council, power stations, irrigators and riparian users), as they do not form part of the regulated bulk water price.

Seqwater's forecast demand for pricing purposes was calculated by multiplying forecast average consumption rates of each council area by the service-connected population.

3.2 Average consumption rates

For each council Seqwater developed a most-likely demand forecast of consumption rates, including a projected rebound from low water use during the Millennium Drought.

Residential

Seqwater projected growth in demand in the SEQ residential sector from 167 l/p/d in 2013-14 to 185 l/p/d in 2018-19. This is equivalent to growth of 2.1% per annum to 2018-19. From then onwards, Seqwater assumed no growth in per-person water use.

The QCA notes that in its 2013-15 review of prices charged by SEQ water retailers (QCA 2014a) it also adopted an average consumption of 185 l/p/d. However, the QCA assumed that this level would be reached in 2016-17, instead of 2018-19.

The per capita consumption adopted by Seqwater is consistent with the requirements of the Referral.

Non-residential

For the non-residential sector, Seqwater projected a small increase from 90 l/p/d in 2013-14 to 91 l/p/d in 2018-19, which represents a growth of 0.2% per annum to 2018-19. To this, Seqwater added losses of 5 l/p/d, taking average non-residential consumption to 96 l/p/d in 2018-19. From 2018-19 onwards, Seqwater assumed no rebound in both average non-residential consumption and losses.

In its review of prices charged by SEQ water and retailers-distributors, the QCA noted that any rebound is unlikely to be as significant for the non-residential sector, given structural changes to business consumption (QCA 2014a). Seqwater's assumed rebound rate of 0.2% for the non-residential sector (excluding losses) is consistent with the QCA's view.

Seqwater submitted that the total loss factor in the first year of the forecast (2014-15) is estimated to be approximately 11.5% of total bulk water volume. The QCA calculated that the additional losses of 5 l/p/d increases this to 12.3% of forecast water demand in 2018-19. Seqwater's projected loss factor is within the loss range from distributing water to the larger council areas such as Brisbane, Sunshine Coast and Gold Coast (QCA 2014a). However, the

nature of Seqwater's assets means its loss factor is not strictly comparable to those of the water retailers.

The per capita consumption adopted by Seqwater is consistent with the requirements of the Referral.

3.3 Population forecast

The QCA notes that Seqwater's population forecast reflects the Office of Economic and Statistical Research (OESR) population forecast medium series, even though its starting (1 July 2013) population reflects the OESR low population series. Because the population series it adopted after 1 July 2013 reflects the OESR medium population series, the population growth for 2013-14 (3.6%) is higher than if it were to adopt the OESR low or medium population series consistently. From 2013-14 onwards population grows by approximately 2.0% per annum.

By way of comparison, in the QCA's last water retail price monitoring review the QCA (2014a) adopted the OESR's low growth series, as the OESR had advised low growth in the short term. This is approximately 1.5% per annum.

The Referral requires the QCA to accept Seqwater's demand forecasts.

3.3.1 Serviced population

Some of the population of SEQ is not connected to a treated water network. To take this into account, Seqwater multiplied the population forecast it adopted by the 'service-connected population factors'.

Seqwater submitted that the service connected population factors applied were originally based on an extensive study completed by the consultancy firm, MWH. The validity of the connected population percentages was subsequently reviewed by comparing the number of water accounts times the average SEQ household size. This demonstrated the connected service population figures applied overall for SEQ were reasonable.

Seqwater submitted that its demand forecasting methodology and input factors have been independently reviewed by the consultancy firm, SKM.

The QCA notes that Seqwater has forecast a small growth in the service-connected population factor for all council areas except Moreton Bay. The small increase in the service-connected population factors is consistent with that documented in the QCA's last water retail price monitoring review.

3.4 Conclusion

The QCA has confirmed that Seqwater's demand forecasts are consistent with the requirements of the Referral which the QCA is required to accept.

Table 5 Seqwater's forecast total annual volume by council area (ML)

Year	*Brisbane*	*Gold Coast*	*Ipswich*	*Lockyer Valley*	*Logan*	*Moreton Bay*	*Scenic Rim*	*Somerset*	*Redlands*	*Sunshine Coast*	*Noosa*	*Total*
2013-14	106,425	56,806	17,308	1,855	20,923	27,026	1,585	1,487	12,658	25,700	5,287	277,060
2014-15	117,549	62,506	16,189	2,491	19,335	30,065	1,887	1,612	13,676	26,730	5,499	297,539
2015-16	121,425	65,416	17,357	2,644	20,259	30,141	2,036	1,704	14,216	28,061	5,773	309,032
2016-17	124,688	68,003	18,531	2,791	21,100	32,432	2,197	1,791	14,683	29,289	6,027	321,532
2017-18	128,275	70,771	19,879	2,946	22,016	34,982	2,389	1,886	15,181	30,734	6,185	335,244
2018-19	131,734	73,519	21,317	3,107	22,944	36,246	2,597	1,984	15,680	32,204	6,343	347,675
2019-20	133,327	75,237	22,532	3,232	23,542	36,977	2,779	2,062	15,946	33,224	6,410	355,268
2020-21	134,098	76,535	23,697	3,346	24,024	37,519	2,952	2,131	16,126	34,074	6,444	360,946
2021-22	135,165	78,003	24,993	3,472	24,581	38,132	3,141	2,207	16,339	35,005	6,494	367,532
2022-23	136,186	79,430	26,341	3,601	25,150	38,709	3,338	2,283	16,543	35,897	6,576	374,054
2023-24	137,485	81,075	27,827	3,744	25,791	39,383	3,553	2,368	16,789	36,893	6,674	381,582
2024-25	137,935	82,286	29,224	3,873	26,297	39,851	3,759	2,442	16,946	37,696	6,736	387,045
2025-26	138,663	83,730	30,763	4,013	26,875	40,414	3,985	2,527	17,144	38,594	6,814	393,522
2026-27	139,310	85,153	32,309	4,149	27,458	40,995	4,195	2,608	17,332	39,459	6,884	399,852
2027-28	140,303	86,782	33,929	4,290	28,126	41,683	4,397	2,691	17,553	40,395	6,964	407,113

Source: Seqwater (2014a)

4 CAPITAL COSTS

4.1 Introduction

Capital costs are the costs of infrastructure and other assets used to deliver services. Capital costs include depreciation (return of capital) and an allowance for the cost of debt (return on capital).

A key driver of capital costs is the Regulatory Asset Base (RAB), which represents the value of assets used by Seqwater to deliver bulk water services. Seqwater's RAB changes over time to reflect new capital expenditure (capex), depreciation and other adjustments.

4.2 Opening asset base

Under the Referral, the QCA is required to accept the opening RAB for Seqwater as at 30 June 2013, as provided by the Minister for Energy and Water Supply.

The Minister has determined a 30 June 2013 RAB of $8.3 billion, including $5.8 billion of 'drought' assets that were constructed in response to the Millennium drought. Upon request, DEWS confirmed the corresponding details regarding the remaining useful lives of the assets.

Table 6 Seqwater RAB as at 30 June 2013

	Value ($m)	***Remaining Life (years)***
Drought assets	5,777	58.85
Non-drought assets	2,507	52.22
Total	8,284	56.84

Note: Remaining lives are weighted averages. Source: Minister for Energy and Water Supply (2014), DEWS (2014a).

Logan City Council (2014) recognised that infrastructure investments were made by the government during the major crisis of the Millennium drought that are now being partially or fully decommissioned. Logan City Council submitted that it does not expect to have them considered as part of the prudent and efficient cost of providing a bulk water service.

The QCA must accept the RAB advised by the Minister - this RAB includes the drought assets.

The Coolum Residents Association (2014), Mr Koerner (2014) and Ms Rose-West (2014) considered that the requirement to accept the RAB prevented the QCA from protecting households against monopoly pricing abuse.

The Referral explicitly requires the QCA to accept the RAB as at 30 June 2013 as advised by the Minister for Energy and Water Supply.

Mr Zazlan (2014) submitted that, as Seqwater manages more than $10 billion of water supply assets, it is imperative to have competent and trustworthy people managing this vital resource. Mr Zazlan noted that accountability and truth are paramount to build trust.

The bulk water review process is public and transparent and conducted in an independent manner and should therefore contribute to the effective management of water resources.

4.3 Capital expenditure planning and delivery

The Referral requires the QCA to assess the existence of robust policies and procedures relating to capex having regard to good industry practice as well as compliance.

The Referral also requires the QCA to have regard to the strategic and operational plans approved by the responsible Ministers under the *South-East Queensland Water (Restructuring) Act 2007.*

The Queensland Government has accepted Seqwater's strategic and operational plan (Seqwater 2014b). Under the plan Seqwater is to ensure:

- capable and innovative people
- a knowledgeable and engaged community
- an integrated whole-of-industry approach
- water and catchment services
- a sustainable financial brand
- a trusted and respected brand.

The primary elements of Seqwater's capex program planning and delivery processes and procedures, relevant to the achievement of the strategic and operational plan are its:

- Planning and Asset Management Framework (PAMF), incorporating capital planning and delivery and asset management
- approach to procurement
- governance framework.

4.3.1 Planning and asset management framework

Capital planning and delivery

Seqwater approach

Seqwater's capital planning life-cycle involves several stages - master planning (stage 1), commitment (stage 2) and implementation (stage 3).

A draft 15-year asset portfolio master plan describes Seqwater's future investment plans for supplying safe, secure, resilient and reliable water for its customers. The master plan summarises and consolidates Seqwater's asset planning processes into a single program of future investment until to 2028.

CH2M HILL review

CH2M HILL noted that Seqwater's capital planning and delivery policies are in place, and related procedures are relatively well-developed. Guidelines and templates exist to support the entire capital planning life cycle. However, CH2M HILL noted the following concerns:

- Seqwater has focused its capital planning resources on short-term delivery and program planning. CH2M HILL expected this to shift toward more long-term planning.
- CH2M HILL did not see evidence of the capture and analysis of either tendered or as-delivered costs for capital operational activities. This information would be invaluable for both tender assessment and estimating purposes.

- CH2M HILL identified inconsistencies in the level of detail in Seqwater's capital planning and delivery templates between projects. These inconsistencies may be symptomatic of a lack of awareness of current policies or a lack of understanding of the need for a robust investment substantiation/approval audit trail.
- CH2M HILL also noted a disconnect between documents employed to justify capital expenditure budgets, and documents for individual projects that may be delivered under these budgets. This creates a risk that individual projects funded through the program are out of scope.

Conclusion

CH2M HILL identified both evidence of good industry practice in Seqwater's capital planning and delivery processes, and areas for improvement. The QCA accepts Seqwater's capital planning and delivery policies and procedures are progressing further from a focus on short-term delivery to longer-term planning and that further improvements can be achieved through greater consistency in application.

Asset management

Seqwater has implemented an asset management policy which underpins its commitment to effective asset management. The asset management framework consists of several components.

Water Security Plan

Although yet to be developed, the Water Security Plan will become the main document driving integrated delivery of Seqwater's asset management strategy. The plan will articulate the operational strategies to be put in place to ensure future water demands, regulatory compliance requirements and stakeholder needs are met. It is anticipated the plan will consolidate and harmonise much of the information and strategies documented in Water Supply Asset Plans developed by the pre-merger entities.

Asset management plans

Seqwater's facility- and area-based plans address any capability shortfall and incorporate assessments of asset capability and whole-of-life cost optimisation.

CH2M HILL noted that the North Pine and Mount Crosby WTP Facilities Asset Management Plans (FAMPs) reviewed as part of the capital expenditure prudency and efficiency reviews (refer below) focused entirely on the demand for asset renewals. The scope of plans could be expanded, however, to include forecast demand for maintenance - which would lead to a clearer interrelationship between a given maintenance regime and renewal cycles. Improved understanding of this interrelationship would in turn better enable Seqwater to make investment decisions with a focus on whole-of-life cost optimisation.

CH2M HILL noted that none of the business cases prepared for projects under the North Pine and Mount Crosby WTP FAMPs included a non-capital option. This was a breach of Seqwater's requirement that a minimum of three options - do-nothing, a capital solution and a non-capital solution - be considered for each project.

Asset class plans

Seqwater's asset class plans define strategies for managing groups of similar assets to optimise service life and efficiency. These plans apply to assets such as pipelines that are not readily attributed to a region or facility.

CH2M HILL noted that the approach to asset class plans is similar to that for asset management plans, but did not identify any specific areas of improvement.

Tactical maintenance plans

Tactical maintenance plans inform the monitoring, maintenance and renewal activities for specific assets. Tactical maintenance plans collectively contribute to the asset investment funding plan which provides post-commissioning maintenance cost information for capital business planning. All of these plans are supported by a regime of regular asset inspections, and condition and risk assessments.

CH2M HILL considered the tactical maintenance plans were comprehensive for the assets covered.

Conclusion

CH2M HILL considered that Seqwater's asset management capability could be improved to address consideration of maintenance and incorporate non-capital options (as required by Seqwater's FAMPs), but that the asset management framework provides a sound basis to achieve good practice. The QCA accepts CH2M HILL's findings.

4.3.2 Procurement

The Strategic Procurement Plan is the 'roadmap' for Seqwater's procurement capability development. The plan identifies key initiatives and strategies to improve procurement, covering policy, process and procedure, awareness, business alignment and system support.

Seqwater submitted that its procurement policy principles align with the Queensland State Government Procurement Policy (Department of Housing and Public Works 2013). This policy is supported by a handbook, process maps and quick guides which give staff direction and guidance on specific issues.

CH2M HILL identified no significant issues in its review of Seqwater's procurement approach. Policies, guidelines and templates were in line with Queensland Government requirements.

The QCA accepts CH2M HILL's findings.

4.3.3 Governance

Seqwater's governance is supported by implementation of three policies:

- corporate risk management policy
- corporate compliance policy (regulatory and corporate)
- capital investment governance charter.

CH2M HILL considered that Seqwater's governance arrangements are at an early level of maturity, with good practice processes largely in place. Execution of these processes is expected to be refined as they are put into practice.

CH2M HILL recommended that the specific approval instruments could be improved and made to be more universally understood to improve governance outcomes. This may be expedited by an awareness campaign, training, or some broadly distributed standardised guidelines.

The QCA accepts CH2M HILL's findings.

4.3.4 Summary

In total, the QCA accepts CH2M HILL's findings that Seqwater has a clear vision for its capital and operational planning framework and is working towards realising this vision. If delivered, it is capable of achieving good practice outcomes in the future.

It is also clear that there is more development required before a robust and tightly integrated suite of planning/management instruments, enabling processes/systems and a fully aware workforce are in place.

CH2M HILL considered that efficiencies will be realised as business processes become more mature, and therefore more integrated and streamlined. However, CH2M HILL could not identify any systemic capital expenditure inefficiencies that would justify a portfolio or sub-portfolio adjustment either for 2014/15 or for the balance of the forecast period.

The QCA accepts CH2M HILL's findings.

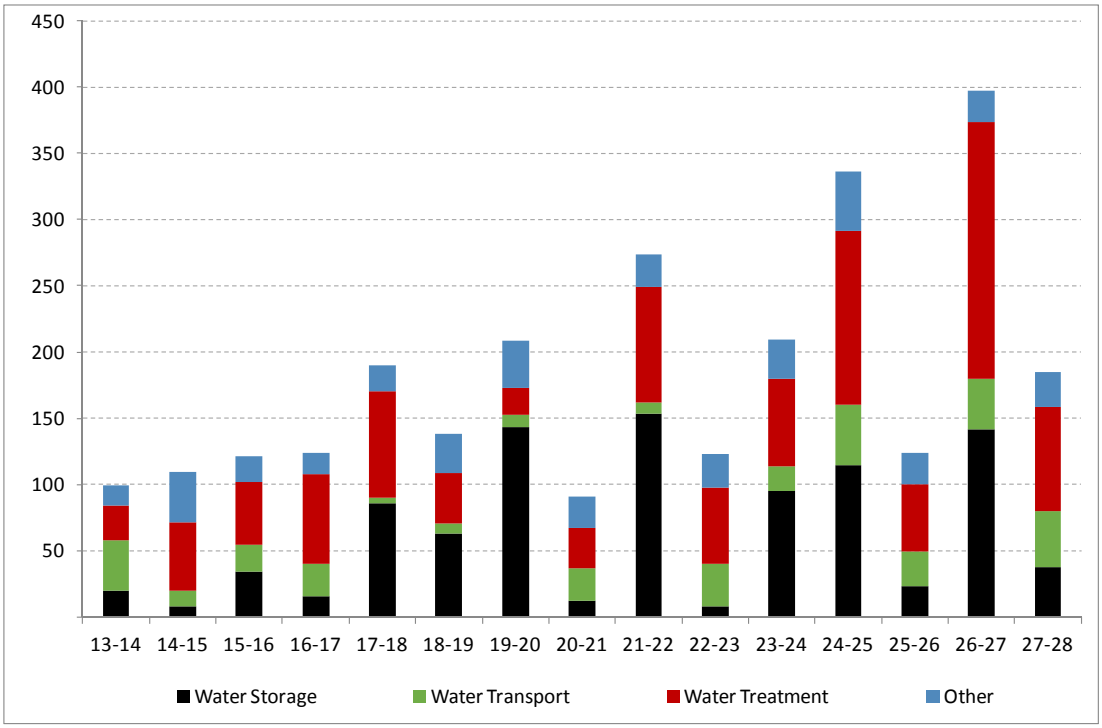
Draft recommendation

4.1 Seqwater improve capital planning and delivery policies and procedures by further progressing from short-term to longer-term delivery focus, improve awareness and consistency in their application and incorporate maintenance and non-capital options in asset management planning.

4.4 Seqwater's capital expenditure program

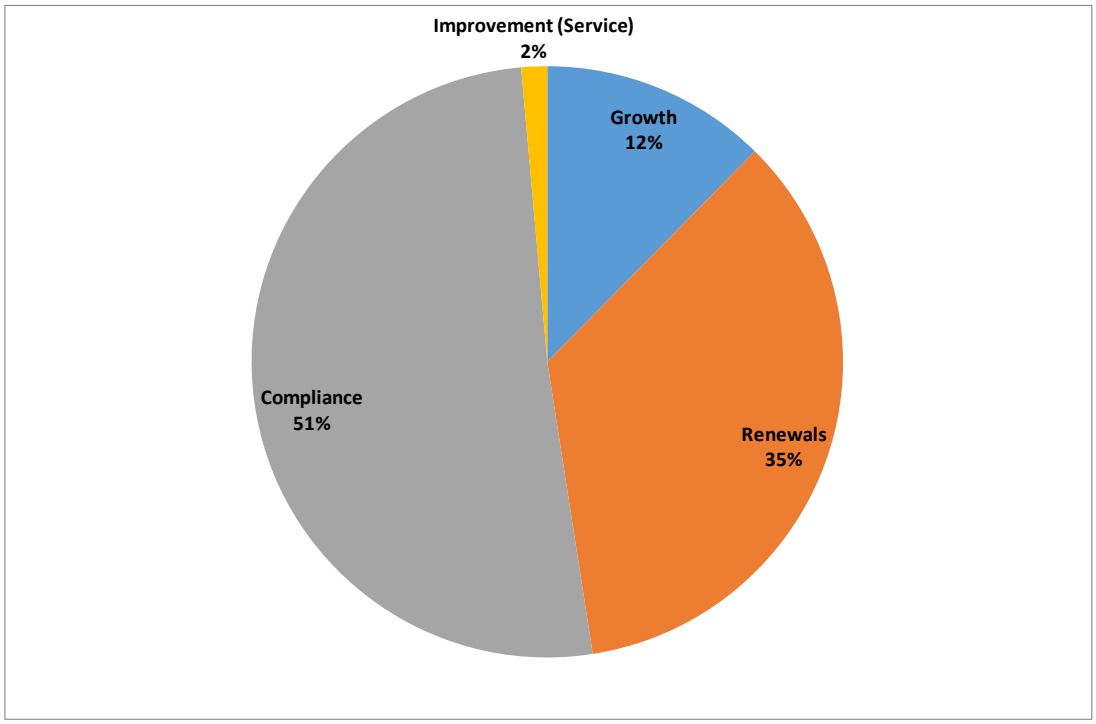
Seqwater submitted a capital expenditure (capex) program totalling $2.75 billion over 2013-28. This includes Seqwater's estimated efficiency savings of 5% applicable from 2015-18.

Figure 4 Seqwater forecast capital expenditure by asset category ($m)



Source: Seqwater (2014c)

Figure 5 Seqwater forecast capital expenditure by driver 2014-28



Source: Seqwater (2014c)

Interim operating strategy

Seqwater has established a Bulk Water Supply System Interim Operating Strategy 2014-2029 (Seqwater 2014b) (Interim Operating Strategy) and has identified water quality and dam safety as the key drivers of its capital expenditure program. The main driver for any growth related assets is peak demand capacity.

The Interim Operating Strategy:

- specifies the supply that is required from key facilities in normal conditions and during emergencies
- is based on a comparison of current transport and treatment asset customer demand
- forms the basis for meeting water supply compliance obligations.

Seqwater submitted that the capital investment program is the most efficient and effective means of ensuring that assets are capable of meeting those specifications, based on the best available information. The program is based on the Asset Portfolio Master Plan.

Water quality

The *Water Supply (Safety and Reliability) Act 2008* (Qld) (WSSR Act) requires Seqwater to prepare a Drinking Water Quality Management Plan (DWQMP). The plan must provide details of the operational and verification monitoring programs under it, including the parameters to be used for indicating compliance with the plan and the water quality criteria for drinking water.

DWQMPs also include risk management improvement programs which demonstrate (to the regulator) how the water service provider will address risks to drinking water quality and outline the interim, short- and long-term management measures and actions and implementation timeframes (DEWS 2010).

Seqwater's contracts with customers also specify treated water quality parameters.

The interim operating strategy details Seqwater's increasing reliance on the capacity of its WTPs to meet peak demand and maintain water quality over the long term.

Dam safety

Seqwater owns 26 dams which are large referable dams under the WSSR Act. Referable dams are dams that have been assessed to have a population of two or more people at risk.

The WSSR Act provides the regulatory framework for maintaining the safety of water dams in Queensland. It empowers DEWS to impose safety conditions on constructed referable dams.

Consistent with the WSSR Act, the dam safety regulator in DEWS has issued spillway adequacy conditions for referable dams, including guidelines that specify the minimum acceptable flood capacity (AFC) that these dams must be able to safely pass (DEWS 2013).

The guidelines on the AFC state that Seqwater should, where feasible, use a risk-based approach to determine the minimum AFC of its large referable dams. Among other things, this involves Seqwater conducting a comprehensive, quantitative risk assessment of the dam for all loads and consequences in accordance with guidelines recommended by the Australian National Committee on Large Dams (ANCOLD).

Seqwater submitted a dam safety program of $615 million over the coming 20 years to meet its dam safety compliance requirements. Dam safety upgrades to the North Pine, Somerset and Leslie Harrison dams are assessed for prudency and efficiency below.

Efficiency gains

Seqwater provided estimates of the full cost of each of its capex projects. It applied a 5% efficiency saving to total capital expenditure incurred during the three year period 2015-18 (Seqwater 2014a).

Seqwater did not specify how this saving would be achieved, or in which projects it would be realised. However, Seqwater is effectively only seeking to recover 95% of its forecast 2015-18 capital expenditure through bulk water prices.

4.5 Prudency and efficiency of capital expenditure

The Referral requires that a maximum of 10 capital expenditure projects be sampled for review. To ensure sufficient coverage of key asset classes, the QCA identified a sample of four large water storage projects, four large WTP projects, the largest pipeline project and the largest past project.

CH2M HILL's assessment and recommendations are based on the as-incurred values. As the QCA only includes capex in the RAB as they are commissioned, the values presented in the table below and in subsequent tables in this section are as-commissioned values. These exclude the portion identified as savings by Seqwater (5% from 2015-16 to 2017-18) and include escalation and interest during construction to their commissioning year.

Table 7 Capital expenditure sample

	Project	*Primary driver*	*Year of commissioning*	*As-incurred cost ($m real)*	*As-commissioned cost ($m nominal)*
1	North Pine Dam upgrade	Compliance	2022	102.5	149.9
2	Somerset Dam stabilisation	Compliance	2027	72.0	124.5
3	Lake MacDonald Dam - new dam	Compliance	2018	60.7	77.3
4	Leslie Harrison Dam - filter buttress/crest reconstruction	Compliance	2020	57.7	76.8
5	Mt Crosby Westbank WTP - capacity upgrade	Growth	2027	77.4	137.8
6	Mount Crosby Eastbank WTP - filtration improvements	Compliance	2018	34.8	44.8
7	Kilcoy WTP upgrade	Renewals	2014	15.6	17.1
8	North Pine WTP - renewals	Renewals	Ongoing	43.8	69.2
9	Mount Crosby Westbank WTP - renewals	Renewals	Ongoing	40.4	64.7
10	Mount Crosby to Green Hill pipeline - renewals	Renewals	Ongoing	42.9	71.8
	Total sample			**553.0**	**833.9**
	Total capital expenditure 2013-28			**2,011.6**	**2,775.2**
	Less Seqwater efficiency saving 5% for 2015-18			**-19.4**	**-20.4**
	Net submitted capital expenditure 2013-28			**1,992.2**	**2,754.8**

Source: Seqwater (2014c). Totals may not add due to rounding.

4.5.1 North Pine Dam upgrade

Background

North Pine Dam has been identified as requiring improvement according to AFC requirements as specified by DEWS and ANCOLD. The project will upgrade Saddle Dam 1 to ensure the dam complies with AFC requirements.

The project is at stage 1—master planning of Seqwater's capital planning life cycle.

Seqwater submitted that expenditure incurred on the project would be $102.5 million from 2019-20 to 2022-23. Including escalation and interest during construction, the project value at commissioning year equals $149.9 million.

Prudency

CH2M HILL agreed with Seqwater's identification of compliance with dam safety requirements as the cost driver for the project. Upon a review of project documentation, CH2M HILL considered the project to be prudent.

Efficiency

Based on the concept-level investigation done to date, and other information made available for its review, CH2M HILL considered the:

- proposed scope of works appeared reasonable
- standard of works is appropriate and in line with good industry practice
- project costs to be reasonable given the project development stage, noting the cost will be further refined and market tested during the design and construct phases.

CH2M HILL concluded that the project is efficient.

Policies and procedures

CH2M HILL found the project was supported by adequate documentation and decision-making process, including options analysis.

Given the fact that no systemic issue was identified with Seqwater's processes regarding the project, CH2M HILL did not consider its findings could be extrapolated to other projects.

Conclusion

On the basis of CH2M HILL's advice, the QCA accepts that the project is prudent and efficient, as reflected in the table below.

Table 8 North Pine Dam upgrade ($m)

	2019-20	*2020-21*	*2020-21*	*2021-22*	*Total*
Seqwater proposed	1.4	0.7	74.4	73.5	**149.9**
CH2M HILL adjustment			-	-	**-**
QCA recommended	**1.4**	**07**	**74.4**	**73.5**	**149.9**

Note: Expenditure as commissioned; table may not add due to rounding. Source: CH2M HILL (2014).

4.5.2 Somerset Dam stabilisation

Background

Somerset Dam has been identified as requiring improvement to meet AFC requirements. The project comprises post-tensioned anchor upgrade works to increase the stability of the dam in response to a probable maximum flood (PMF) event and earthquake.

The project is at stage 1—master planning of Seqwater's capital planning life cycle.

Seqwater submitted that expenditure incurred on the project would be $72.0 million over 2024-25 to 2026-27. The QCA notes that including escalation and interest during construction, the project value at commissioning year equals $124.5 million.

Prudency

CH2M HILL agreed with Seqwater's identification of compliance with dam safety requirements as the cost driver for the project. Based on a risk assessment undertaken in 2014, Seqwater determined that the dam satisfies current, but not long-term, requirements of the AFC guidelines. Consequently, it was noted in the Wivenhoe-Somerset Dam Optimisation Study (DEWS 2014b) that dam safety upgrades would be required for Somerset Dam by 2035. Upon a review of project documentation, CH2M HILL considered the project to be prudent.

Efficiency

CH2M HILL noted that the as-incurred cost estimate of $72.0 million outlined in Seqwater's submission has been revised. Seqwater has since submitted that the Somerset Dam - Dam Stabilisation Design project needs to be considered in conjunction with the Somerset Dam Concrete Abatement Aprons project. Seqwater stated that the revised cost of the two projects is $58.8 million and provided a report prepared by GHD as justification of the revised costs.

CH2M HILL noted that Seqwater had identified the Somerset Dam - Dam Stabilisation Design project as a distinct project in a broader program of dam safety upgrade works. However, no reference to this project has been made in a GHD study provided by Seqwater as justification of its submitted costs. In light of this inconsistency, CH2M HILL based its decision on the level of justification and substantiation available.

A cost estimate developed by GHD principally involves dam wall structure anchoring works. CH2M HILL considers this to be an appropriate and reasonable level of substantiation and recommended an efficient cost estimate reflecting GHD's report of $33.8 million ($58.4 million as at commissioning year).

Policies and procedures

Aside from the inconsistency regarding cost estimates, CH2M HILL considered that the project is supported by an adequate decision-making process to date.

Given the unique nature of the project and the fact that no systemic issue was identified with Seqwater's processes regarding the project, CH2M HILL did not consider its findings could be extrapolated to other projects.

Conclusion

On the basis of CH2M HILL's advice, the QCA accepts that the project is not efficient and that only $58.4 million of expenditure should be included in prices.

Table 9 Somerset Dam stabilisation ($m)

	2024-25	*2025-26*	*2026-27*	*Total*
Seqwater proposed	3.2	53.0	68.2	124.5
CH2M HILL adjustment	-	-26.5	-39.6	-66.1
QCA recommended	**3.2**	**26.5**	**28.6**	**58.4**

Note: Expenditure as commissioned; table may not add due to rounding. Source: CH2M HILL (2014).

4.5.3 Lake MacDonald Dam—new dam

Background

Lake MacDonald Dam is located in the Noosa hinterland and is one of two principal raw water sources which supply Noosa Shire. Detailed site and risk investigations by Seqwater and its consultant determined that the dam does not satisfy the requirements of DEWS' AFC guidelines, Queensland Dam Safety Management Guidelines (2002), or various ANCOLD guidelines. Further, the dam is a key supply source for the Noosa WTP, which in turn plays a critical role in the Sunshine Coast region's water supply.

The project involves construction of a new dam upstream of the existing dam.

The project is at the commitment stage of Seqwater's capital planning life cycle and a business case has been approved.

Seqwater submitted that expenditure incurred on the project would be $60.7 million from 2014-15 to 2017-18. Including escalation and interest during construction, the project value at commissioning year equals $73.5 million.

Prudency

CH2M HILL agreed with Seqwater's identification of compliance with dam safety requirements and growth as the primary and secondary cost drivers respectively for the project. Upon a review of project documentation, CH2M HILL considered the project to be prudent.

Efficiency

Based on the concept-level of investigation done to date, and other information made available for its review, CH2M HILL considered the:

- proposed scope of works appeared reasonable
- standard of works is appropriate and in line with good industry practice
- project costs to be reasonable and substantiated.

CH2M HILL concluded that the project is efficient.

Policies and procedures

The project was supported by adequate documentation and decision-making process, including options analysis.

Given the unique nature of dam safety upgrades and the fact that no systemic issue was identified with Seqwater's processes regarding the project, CH2M HILL did not consider its findings could be extrapolated to other projects.

Conclusion

On the basis of CH2M HILL's advice, the QCA accepts that the project is prudent and efficient, as reflected in the table below.

Table 10 Lake MacDonald Dam ($m)

	2014-15	*2015-16*	*2016-17*	*2017-18*	*Total*
Seqwater proposed	1.1	2.5	37.1	36.6	**77.3**
CH2M HILL adjustment	-	-	-	-	**-**
QCA	**1.1**	**2.5**	**37.1**	**36.6**	**77.3**

Note: Expenditure as commissioned; excludes Seqwater's 5% efficiency saving in 2015-18. Source: CH2M HILL (2014).

4.5.4 Leslie Harrison Dam—filter buttress/crest reconstruction

Background

Leslie Harrison Dam is located on Tingalpa Creek and supplies 20% of Redland City's water. Seqwater determined that the dam does not meet AFC requirements and represents an unacceptable societal risk.

The project is the first stage of upgrade works to reduce the societal risk below the ANCOLD limit of tolerability to ensure compliance with DEWS guidelines on AFC for dams. The project involves reconstruction of the filter buttress and crest of the dam to increase its height.

The project is at stage 1- master planning of Seqwater's capital planning life cycle.

Seqwater submitted that expenditure incurred on the project would be $57.7 million from 2014-15 to 2019-20. The QCA notes that including escalation and interest during construction, the project value at commissioning year equals $76.8 million.

Prudency

CH2M HILL agreed with Seqwater's identification of compliance with dam safety requirements as the cost driver for the project. A range of AFC assessments, risk assessments, investigations and high-level conceptual options assessments support the project's development. Upon a review of project documentation, CH2M HILL considered the project to be prudent.

Efficiency

Based on the concept-level of investigation done to date, and other information made available for its review, CH2M HILL considered the:

- proposed scope of works appeared to be reasonable
- standard of works is appropriate and in line with good industry practice
- project costs to be reasonable given the project development stage, noting the cost will be further refined and market tested during the design and construct phases.

CH2M HILL concluded that the project is efficient.

Policies and procedures

The project was supported by adequate documentation and decision-making process, including options analysis.

CH2M HILL's review of the project's decision-making processes did however identify an opportunity to improve Seqwater's Dams and Weirs Capital Works Program. The program builds on investigations undertaken as part of Seqwater's Dams Portfolio Risk Assessment (PRA) but does not provide an appropriately detailed outline/discussion of the planned program of works, and the staging of those works, specific to each dam. As such, it remains unclear in some instances how Seqwater has progressed from individual findings from the PRA to the program.

Given the unique nature of dam safety upgrades and the fact that no systemic issue was identified with Seqwater's processes regarding the project, CH2M HILL did not consider its findings could be extrapolated to other projects.

Conclusion

On the basis of CH2M HILL's advice, the QCA accepts that the project is prudent and efficient, as reflected in the table below.

Table 11 Leslie Harrison Dam - filter buttress/crest reconstruction ($m)

	2014-15	*2015-16*	*2016-17*	*2017-18*	*2018-19*	*2019-20*	*Total*
Seqwater proposed	1.3	1.2	-	0.2	40.7	33.4	**76.8**
CH2M HILL adjustment	-	-	-	-	-	-	**-**
QCA	**1.3**	**1.2**	**-**	**0.2**	**40.7**	**33.4**	**76.8**

Note: Expenditure as commissioned; excludes Seqwater's 5% efficiency saving in 2015-18; table may not add due to rounding. Source: CH2M HILL (2014)

4.5.5 Mount Crosby Westbank WTP capacity upgrade

Background

The Mount Crosby WTPs—Eastbank and Westbank—supply approximately 40% of the water produced from Seqwater's WTP portfolio. The Eastbank WTP capacity is 500 megalitres per day (ML/d) and that of Westbank is 250 ML/d. Based on mean day maximum month (MDMM) demand growth, Seqwater has assessed that combined output will be required to increase to 850 ML/d by 2027.

The Mount Crosby Westbank WTP capacity upgrade will supplement the plant's existing processes with a membrane filtration facility sized at 350 ML/d. The membrane will operate with existing infrastructure to reduce potential fouling on membranes, with some augmentation required for the existing infrastructure involving an additional flocculation area and additional raw water pumps.

The project is at stage 1—master planning of Seqwater's capital planning life cycle.

Seqwater submitted that expenditure incurred on the project would be $77.4 million from 2023-24 to 2026-27. Including escalation and interest during construction, the project value at commissioning year equals $137.8 million.

Prudency

CH2M HILL agreed with Seqwater's identification of growth as the cost driver for the project.

CH2M HILL noted that two options to increase capacity at the Mt Crosby site are being considered in detail by Seqwater, with one at Westbank and one at Eastbank.

CH2M HILL considered that a capacity upgrade of the Mt Crosby WTPs would be the most appropriate means of meeting a forecast shortfall in treatment capacity in the bulk water system in 2027. As such, CH2M HILL has assessed the Mount Crosby Westbank WTP – Capacity Upgrade project as prudent.

Efficiency

CH2M HILL was concerned by the high degree of uncertainty regarding the optimal option for upgrading capacity at Mt Crosby WTPs. In particular, Seqwater had submitted an upgrade of the Westbank WTP that is 120% more expensive than the preferred option (an upgrade of Eastbank WTP) identified by its own analysis.

CH2M HILL concluded that there was no documented justification for this decision and that the lower cost estimate of $35 million ($60.7 million at commissioning year), relating to an upgrade of the Eastbank WTP, should be adopted.

Policies and procedures

CH2M HILL found that the project is supported by an adequate decision-making process to date.

Given the unique nature of the project and the fact that no systemic issue was identified with Seqwater's processes regarding the project, CH2M HILL did not consider its findings could be extrapolated to other projects.

Conclusion

On the basis of CH2M HILL's advice, the QCA accepts that the project is not efficient and that only $35m ($60.7 million at commissioning year) of expenditure should be included in prices.

Table 12 Mount Crosby Westbank WTP upgrade ($m)

	2023-24	*2024-25*	*2025-26*	*2026-27*	*Total*
Seqwater proposed	14.7	42.5	41.0	39.6	**137.8**
CH2M HILL adjustment	-14.7	-42.5	-14.5	-5.5	**-77.2**
QCA	**-**	**-**	**26.5**	**34.1**	**60.7**

Note: Expenditure as commissioned; table may not add due to rounding. Source: CH2M HILL (2014).

4.5.6 Mount Crosby Eastbank WTP—filtration improvements

Background

The Mount Crosby Eastbank WTP filtration improvements project involves refurbishing the filters at the Eastbank WTP. The project is included in the needs analysis of Seqwater's Drinking Water Quality Improvement Plan. This plan is part of Seqwater's DWQMP, a requirement of the WSSR Act.

The project is at stage 2—commitment of Seqwater's capital planning life cycle.

Seqwater submitted that expenditure incurred on the project would be $34.8 million from 2014-15 to 2017-18. Including escalation and interest during construction, the project value at commissioning year equals $42.7 million.

Prudency

CH2M HILL agreed with Seqwater's identification of compliance with water quality requirements as the cost driver for the project and considered a clear, consistent and transparent decision-making process had been followed with respect to the project.

Based on a review of available documentation, CH2M HILL found the project to be prudent.

Efficiency

CH2M HILL considered the proposed scope of works to be reasonable based on the preliminary design-level of investigation done to date.

The standard of works was found to be appropriate and in line with good industry practice and the project cost estimate was reasonable for a preliminary design.

CH2M HILL considered the project to be efficient.

Policies and procedures

Given the fact that no systemic issues were identified, CH2M HILL considered the findings of its review could not be extrapolated to other projects.

Conclusion

On the basis of CH2M HILL's advice, the QCA accepts that the project is prudent and efficient, as reflected in the table below.

Table 13 Mount Crosby Eastbank WTP - filtration improvements ($m)

	2014-15	*2015-16*	*2016-17*	*2017-18*	*Total*
Seqwater proposed	1.8	14.5	14.3	14.1	**44.8**
CH2M HILL adjustment	-	-	-	-	**-**
QCA	**1.8**	**14.5**	**14.3**	**14.1**	**44.8**

Note: Expenditure as commissioned; excludes Seqwater's 5% efficiency saving in 2015-18. Source: CH2M HILL (2014).

4.5.7 Kilcoy WTP upgrade

Background

The Kilcoy WTP upgrade project is a completed project for a new 4 ML/day WTP. The new plant is adjacent to the existing Kilcoy-Somerset WTP and will draw raw water from Somerset Dam.

The project was commissioned in 2013-14 and it is at stage 3—implementation of Seqwater's capital planning life cycle.

Seqwater submitted that expenditure incurred from 2011-12 to 2013-14 on the project would be $15.6 million. Including escalation and interest during construction, the project value at commissioning year equals $17.1 million.

This project was reviewed during the 2012-13 GSCs investigation (QCA 2012) and was found prudent and efficient at a total cost of $17.8 million. However, the QCA noted concerns from the SEQ Water Grid Manager regarding the cost and project specifications.

Prudency

CH2M HILL agreed with Seqwater's identification of compliance with water quality obligations as the cost driver for the project. The new plant was selected from a range of options reviewed by Seqwater and GHD. CH2M HILL considered Seqwater's decision-making process was adequate and found the project to be prudent based on a review of available documentation.

Efficiency

CH2M HILL considered the scope of works for progressing the project to market were limited but adequate—CH2M HILL would expect that future business cases would provide greater detail with respect to the planned scope of works.

The standard of works was found to be appropriate and consistent with industry requirements and standards. CH2M HILL considered the project cost to be reasonable based on being delivered within the revised post-market budget review cost estimate.

CH2M HILL found the project to be efficient.

Policies and procedures

Given the fact that no systemic issues were identified, CH2M HILL considered the findings of its review could not be extrapolated to other projects.

Conclusion

On the basis of CH2M HILL's advice, the QCA accepts that the project is prudent and efficient with total expenditure of $17.1 million as commissioned.

4.5.8 North Pine WTP—renewals

Background

North Pine WTP is adjacent to and downstream of the southern abutment of North Pine Dam. The plant has a nominal design capacity of 250 ML/d and provides supply to Brisbane City and the Pine Rivers, Redcliffe and Caboolture districts of Moreton Bay Region.

The North Pine WTP renewals program comprises a range of projects identified through the plant's FAMP. A number of projects are included in the plan, of which nine have business cases and were submitted for review.

Table 14 North Pine WTP - renewals: reviewed projects ($)

Project	*Driver*	*Commissioning year*	*Expenditure*
Modify sedimentation basins 1 & 2 travelling bridge	Efficiency / renewal	2013-14	470,000
Repair to flocculation chambers and mixing chambers	Renewal	2013-14	400,000
Sludge thickening tank concrete repair	Renewal	2014-15	160,000
Replace backup generator	Renewal / compliance	2014-15	207,000
Sump pump upgrade	Reliability	2013-14	50,000
Replace fluoride hopper	Compliance / service	2014-15	18,000
Repair administration building roof	Compliance / renewal	2014-15	220,000
Replace program logic controller 101 and 102	Renewal	2014-15	144,000
Install fall arrest systems to buildings	Compliance	2014-15	50,000
Total			**1,719,000**

Note: Expenditure as incurred. Source: CH2M HILL (2014)

The projects reviewed are at stage 2 —commitment of Seqwater's capital planning life cycle. Although Seqwater submitted that some of these projects would be delivered in 2013-14, CH2M HILL believed that they would be delivered in 2014-15.

Prudency

CH2M HILL considered that the cost drivers nominated by Seqwater were appropriate, with the exception of the fall arrest system, which CH2M HILL considered was not appropriate for program funding, and the sump pump upgrade, which was 'tenuous' given the good condition and low criticality of the assets.

Seven of the nine projects were assessed as being prudent on the basis that the business cases demonstrated project need with reference to the FAMP.

The exceptions were:

- installation of a fall arrest systems to buildings
- replacement of the fluoride hopper.

The fall arrest systems project - while worthwhile - was considered out-of-scope for renewals funding by CH2M-HILL. The QCA acknowledged CH2M HILL's finding that the fall arrest systems

project was not sufficiently referencing the FAMP. However, as CH2M HILL found this project to be justified by Seqwater, the QCA accepts it as prudent.

The fluoride hopper project is to replace an asset component that is well within its expected design life but has failed due the use of the wrong grade of steel by the original contractor. CH2M HILL believed that the contractor should cover both supply and installation costs of replacement of the hopper under standard industry defect liability arrangements.

Efficiency

CH2M HILL found that the business cases provided a variable but generally low level of detail on the scope and, in all cases, insufficient detail to enable a robust cost build-up. This was particularly the case for complex or high-expenditure items under the program.

No information on the standard of works the individual projects will conform to was provided. CH2M HILL recommended the performance and condition of the post-renewal asset be clearly stated in the business cases, including an assessment of the expected post-renewal design life.

With the exception of the fluoride hopper replacement, project costs generally appeared to lack adequate substantiation. Operational cost considerations were also not documented in any of the business cases seeking renewal and refurbishment funding. Further, the 10-year renewal and refurbishment program (Appendix A to the FAMP) did not include an allocation for the travelling bridge or flocculation chamber repair projects and implied that more investigation was required to establish costs for both.

The business cases provided cost estimates that were $\pm$ 30% accurate and good practice would require a higher level of accuracy for delivery. CH2M HILL found no evidence of a planned review of project estimates prior to tendering. CH2M HILL also observed differential risk ratings between business cases and condition and criticality ratings in the FAMP.

In terms of timing and delivery, CH2M HILL expressed concern that the travelling bridge and flocculation chamber repair projects had been brought forward from 2016-17 despite being flagged in the FAMP for further reporting to justify expenditures.

Despite CH2M HILL's concerns, it assessed these projects as efficient on the basis that further investigation will be undertaken to refine project scope/cost and project timing will revert to what was presented in the FAMP program.

The QCA does not accept this recommendation. The QCA considers that CH2M HILL has documented serious shortcomings with Seqwater's renewals program at North Pine WTP and for each of the nine projects selected for detailed review. The QCA has therefore removed the $1.8 million (value at commissioning year) of renewals expenditure in 2014-15 relating to the nine projects reviewed by CH2M HILL.

CH2M HILL also noted Seqwater forecasts for renewals expenditure at the North Pine WTP increase significantly beyond 2022. There is no document that CH2M HILL is aware of that justifies this increase. CH2M HILL considered that in the absence of any justification, there is a strong case to be made for perpetuation of the funding levels currently established and justified in the North Pine WTP FAMP.

The average annual renewals expenditure during the FAMP planning period (2014-22) is $0.6 million. From this low base, from 2022-23 onwards, renewals expenditure rises to $6.5 million per annum. Given the lack of substantiation available to CH2M HILL for the post-FAMP period, the QCA has reduced Seqwater's forecast renewals expenditure at North Pine WTP from 2018-19 onwards by $60 million (value at commissioning year).

Policies and procedures

CH2MHILL found that the procurement methodology stated in the business cases (generally three quotes) was not reviewed against or aligned to Seqwater's procurement policies or procedures.

As Seqwater develops its renewals programs on a facility basis CH2M HILL considered that the findings of the North Pine WTP renewals program cannot be extrapolated to other programs.

Conclusion

The QCA recommends that Seqwater capital expenditure be reduced in 2014-15 to reflect the shortcoming documented by CH2M HILL in Seqwater's substantiation of its renewals program at the North Pine WTP. Further, the QCA recommends that the large, unsubstantiated increase in forecast renewals from 2022-23 be reduced to the efficient level of renewals in 2014-22.

Table 15 North Pine WTP – renewals ($m)

	2014-15	*2015-16*	*2016-17*	*2017-18*	*2018-28*	*Total*
Seqwater proposed	2.2	0.2	0.3	-	66.5	**69.2**
Recommended adjustment	-1.8	-	-	-	-60.0	**-61.8**
QCA	**0.4**	**0.2**	**0.3**	**-**	**6.6**	**7.4**

Note: Expenditure as commissioned; excludes Seqwater's 5% efficiency savings in 2015-18; table may not add due to rounding. Source: CH2M HILL (2014), QCA calculations.

4.5.9 Mount Crosby Westbank WTP—renewals

Background

The Mount Crosby Westbank WTP renewals program consists of a range of projects which have been identified through the Mount Crosby Westbank WTP FAMP. A number of projects are included in the FAMP, of which seven have business cases and were submitted for review.

Table 16 Mount Crosby Westbank WTP – renewals: reviewed projects ($)

Project	*Driver*	*Commissioning year*	*Expenditure*
Replace alum dosing system pipework	Renewal	2014-15	50,000
Overhaul sludge processing centrifuge	Service	2013-14	70,000
Install thermal monitoring three raw water pumps	Renewal	2014-15	143,000
Overhaul raw water pump 5 water pump and motor	Service	2014-15	300,000
Refurbish DAFF recycle pump 7	Service	2014-15	18,000
Replace sump pump in raw water pump well 2	Service	2013-14 & 2014-15	20,000
Replace waste water pumps and motors	Service	2014-15	80,000
Total			**681,000**

Source: CH2M HILL (2014)

The projects reviewed are at stage 2 —commitment of Seqwater's capital planning life cycle.

Prudency

CH2M HILL considered that the drivers for all projects were appropriate, with the exception of the thermal monitoring equipment project. The driver for this project should be reliability and service in accordance with Seqwater's guideline for capital expenditure projects budget 2014-15.

CH2M HILL concluded all the projects to be prudent on the basis that business cases demonstrated project need with reference to the FAMP.

Efficiency

The business cases provided a variable but generally acceptable level of detail on the scope. A number of business cases included a project brief that was sufficiently scoped to develop a robust cost build-up.

Limited information on the standard of works the individual projects will conform to was provided. CH2M HILL recommended the performance and condition of the post-renewal asset be clearly stated in the business cases, including an assessment of expected post-renewal design life.

Costs for the submitted projects were adequately substantiated for their levels of expenditure and complexity. However, operational cost considerations, such as maintenance expenditure, were not documented in any of the business cases seeking renewal and refurbishment funding.

The business cases provided cost estimates that were ± 30% accurate while good practice would require a higher level of accuracy for delivery. CH2M HILL found no evidence of a planned review of project estimates prior to tendering.

Despite a number of concerns CH2M HILL considered, on balance, the projects to be efficient.

In terms of timing and delivery, CH2M HILL observed that the sludge processing centrifuge overhaul project was brought forward from 2017-18 (in the FAMP) to 2013-14. In the absence of a substantial case for this change, CH2M HILL recommended that the original timing be retained.

CH2M HILL also noted Seqwater forecasts for renewals expenditure at the Mt Crosby Westbank WTP increase significantly beyond 2022. There is no document that CH2M HILL is aware of that justifies this increase. CH2M HILL considered that in the absence of any justification, there is a strong case to be made for perpetuation of the funding levels currently established and justified in the Mt Crosby Westbank WTP FAMP.

The average annual renewals expenditure during the FAMP planning period (2014-22) is $0.7 million. From 2022-23 onwards, this rises to $5.8 million per annum. Given the lack of substantiation available to CH2M HILL for the post-FAMP period, the QCA has reduced Seqwater's forecast renewals expenditure at Mt Crosby Westbank WTP from 2022-23 onwards to the average over 2014-22 (or $10.8 million over 2018-28).

Policies and procedures

CH2M HILL found that the procurement methodology stated in the business cases (generally three quotes) was not reviewed against or aligned to Seqwater's procurement policies or procedures.

As Seqwater develops its renewals programs on a facility basis the findings of the Mount Crosby WTP-renewals program cannot be extrapolated to other programs.

Conclusion

On the basis of CH2M HILL's analysis, the QCA's expenditure profile is reflected in the table below.

Table 17 Mount Crosby WTP - renewals ($m)

	2014-15	*2015-16*	*2016-17*	*2017-18*	*2018-28*	*Total*
Seqwater proposed	0.7	1.0	0.8	0.9	61.2	**64.6**
Recommended adjustment	-0.1	—	—	+0.1	-50.4	**-50.3**
QCA	**0.6**	**1.0**	**0.8**	**1.1**	**10.8**	**14.2**

Note: Expenditure as commissioned; excludes Seqwater's 5% efficiency saving in 2015-18; table may not add due to rounding. Source: CH2M HILL (2014), QCA calculations.

4.5.10 Mount Crosby to Green Hill Pipeline—renewal

Background

The project involves the renewal of the 48.2 km mild-steel, cement-lined bulk water pipeline from Mount Crosby to Green Hill. The project is part of Seqwater's pipeline renewal program which is delivered as a number of 'schemes' - this project is referred to as Scheme S16.

Through a broader pipeline condition management initiative, Seqwater identified the application of cathodic protection as an effective method of maximising the life of metallic pipelines. Scheme S16 has been earmarked for cathodic protection roll-out.

The project is at stage 2 —commitment of Seqwater's capital planning life cycle.

Seqwater submitted that expenditure incurred on the project would be $42.9 million over 2013-28. Including escalation and interest during construction, the project value at commissioning year equals $71.8 million.

Prudency

CH2M HILL agreed with Seqwater's identification of asset renewal as the cost driver for the project.

In 2012, GHD prepared a range of documentation to assist LinkWater (then asset owner) implement a risk-based approach to its pipeline management program. These documents formalised the processes of the Pipeline 30-Year Program and Implementation Plan, produced by GHD in January 2013. CH2M HILL considered the GHD documents for the Seqwater pipeline portfolio were relatively transparent and robust.

However, CH2M HILL received little evidence of investment approval resulting from the GHD documents - the 30-year program and plan provided well-documented expenditures but the financial outputs of the plan differed from Seqwater's forecast figures.

Based on the documentation provided, CH2M HILL could not establish the approval mechanism for all projects under the pipeline renewals program. However, an audit trail could be established for the annual cathodic protection sub-program and for individual schemes. CH2M HILL found there was adequate evidence to justify the need for the proposed cathodic protection scheme and to substantiate the expense.

CH2M HILL considered the project to be prudent.

Efficiency

CH2M HILL considered:

- sufficient evidence was provided to substantiate the scope of works for Scheme S16 (no documentation was provided in relation to the scope of works for the broader program)
- it was reasonable to assume—given Seqwater has sought guidance from an industry leader on the approach to cathodic protection scheme for the pipeline—that the standard of works is appropriate and in line with good industry practice
- project costs were not substantiated.

In the absence of cost substantiation, CH2M HILL concluded the project not to be efficient.

Policies and procedures

CH2M HILL acknowledged the cathodic protection program was initiated prior to the merger with LinkWater and was therefore developed under slightly different policy and procedures. Notwithstanding this, CH2M HILL observed that Queensland Government guidance on procurement had not changed substantially for a number of years and identified the following concerns:

- Scheme S16 had been sole-sourced to Thiess Services even though the quantum of work exceeded $1 million.
- LinkWater (pre-merger) seemed to have had limited control over the scope of works.
- There was limited evidence of investment approval through the program life cycle.
- Comments made in one of the project justification reports seemed to demonstrate a low level of concern for either scope or on-time delivery.

CH2M HILL also stated Seqwater should consider modifying internal documentation, or implementing new documentation, to record investment approvals and capture outputs of decision-support documentation produced by external parties not provided in Seqwater formats.

CH2M HILL did not consider the findings could be extrapolated to other programs.

Conclusion

On the basis of CH2M HILL's advice, the QCA accepts that the project is prudent but not efficient.

Table 18 Mount Crosby to Green Hill Pipeline – renewal ($m)

	2015-16	***2016-17***	***2017-18***	***2018-19***	***2019-20***	***2020-21***	***2021-22***	***2022-28***	***Total***
Seqwater proposed	0.02	0.03	0.01	0.01	0.05	0.08	—	71.58	**71.78**
CH2M HILL adjustment	–0.02	–0.03	–0.01	–0.01	–0.05	–0.08	—	–71.58	**–71.78**
QCA	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**

Note: Expenditure as commissioned; table may not add due to rounding. Source: CH2M HILL (2014)

4.6 Capital expenditure escalation

Seqwater forecast its capital expenditure program in real terms; that is, excluding the impact of inflation. For the purposes of price modelling it converted these real costs into nominal terms using a capital expenditure escalator.

Seqwater adopted escalation factors as advised by its consultant, PwC:

- The Australian Construction Industry Forum's engineering construction price index for the period from 2013-14 to 2022-23.
- Consumer Price Index (CPI) forecasts from the Reserve Bank of Australia (RBA) for the period from 2023-24 to 2027-28.

CH2M HILL noted that the QCA has accepted the use of the Australian Construction Industry Forum (ACIF) engineering construction price index for escalating capital expenditure forecasts in the past. As such, CH2M HILL considered that Seqwater's proposed approach is reasonable.

Given the level of uncertainty of capital cost inflation over the longer term, CH2M HILL considered Seqwater's proposed escalator of the mid-point of the RBA's inflation target (2.5%) to be appropriate.

The QCA accepts CH2M HILL's recommendations.

Table 19 Capital expenditure escalation factors (%)

	2013 -14	***2014 -15***	***2015 -16***	***2016 -17***	***2017 -18***	***2018 -19***	***2019 -20***	***2020 -21***	***2021 -22***	***2022 -23***	***2023-28***
Seqwater submitted	4.34	5.24	4.80	4.75	4.67	4.65	4.70	4.92	5.01	4.88	2.50 per annum
CH2M HILL Adjustments	-	-	-	-	-	-	-	-	-	-	-
QCA recommended	4.34	5.24	4.80	4.75	4.67	4.65	4.70	4.92	5.01	4.88	2.50 per annum

Source: CH2M HILL (2014).

4.7 Interest during construction

Seqwater's submission includes an allowance for interest during construction for capital expenditure projects that span more than one financial year. For past capex, Seqwater calculated interest during construction using its allowed rate of return for each year. For future capex Seqwater has used the cost of debt forecast by QTC (6.25%).

Table 20 Interest during construction (%)

	2011-12	***2012-13***	***2013-14***	***2014-15***	***2015-16***	***2016-17***	***2017-18***	***2018-28***
Interest rate applied	9.83	9.90	5.90	5.90	6.25	6.25	6.25	6.25 per annum

Source: Seqwater (2014c)

Consistent with past practices, and the requirement of the Referral to accept the cost of debt nominated by the QTC, the QCA accepts Seqwater's approach.

4.8 Summary of capital expenditure adjustments

On the basis of CH2M HILL's detailed review (which includes project information made available by Seqwater since its initial submission), the QCA recommends a $327.1 million or 39% reduction to the 10 sampled projects.

Table 21 Sampled capital expenditure adjustments ($m)

	Project	*CH2M HILL assessment*		*Expenditure*		
		Prudent	*Efficient*	*Seqwater*	*Adjustment*	*Total*
1	North Pine Dam upgrade	Prudent	Efficient	149.9	–	149.9
2	Somerset Dam stabilisation	Prudent	Partially justified	124.5	–66.1	58.4
3	Lake MacDonald Dam – new dam	Prudent	Efficient	77.3	–	77.3
4	Leslie Harrison Dam – filter buttress/crest reconstruction	Prudent	Efficient	76.8	–	76.8
5	Mt Crosby Westbank WTP – capacity upgrade	Prudent	Not efficient	137.8	-77.2	60.7
6	Mount Crosby Eastbank WTP – filtration improvements	Prudent	Efficient	44.8	–	44.8
7	Kilcoy WTP upgrade	Prudent	Efficient	17.1	–	17.1
8	North Pine WTP – renewals	Prudent	Partially Justified	69.2	-61.8	7.4
9	Mount Crosby Westbank WTP – renewals	Prudent	Partially justified	64.6	-50.3	14.2
10	Mount Crosby to Green Hill Pipeline – renewals	Prudent	Insufficient justification	71.8	-71.8	–
	Total			**833.9**	**-327.1**	**506.6**

Note: Expenditure as commissioned; *excludes Seqwater's 5% efficiency saving in 2015-18. Totals may not add due to rounding.*

Seqwater submitted a capex program totalling $2.75 billion over 2013-28. This includes Seqwater's self-nominated efficiency savings of 5% or $20.4 million applicable for 2015-18.

The QCA's review of prudency and efficiency was based on Seqwater's gross capex for each project (that is, did not include Seqwater's savings).

The QCA reviewed projects over the entire 2013-28 period and identified reductions of $327.1 million.

Over 2015-18 Seqwater has nominated savings of 5% on its forecast capex.

For the $284 million for 2015-18 not reviewed by the QCA, the QCA accepts Seqwater's self-nominated 5% saving ($14.2 million).

Over 2015-18 the QCA only identified $0.1 million in savings in the $124 million capex reviewed. This is a lower reduction than proposed by Seqwater ($6.2 million), equating to a net increase of $6.1 million to Seqwater's net capex.

In total, the net reduction to capex is therefore $321.0 million or 11.7% over the entire 2013-28 period.

As recommended by CH2M HILL, the QCA has not extrapolated CH2M HILL's findings to the remainder of Seqwater's capital expenditure program. CH2M HILL did identify improvements that should be made to Seqwater's capital planning process, but was not able to quantify any corresponding savings.

For the period 2015-18, the QCA therefore accepts Seqwater's proposed savings of $14.2 million for unsampled projects in 2015-18 (as an estimate of savings that could arise from improved capital planning processes).

Draft recommendation

4.2 Seqwater's forecast capital expenditure for 2013-28 be reduced by $321.0 million.

4.9 Depreciation

The Referral requires Seqwater to recover a return of assets, calculated as straight-line depreciation.

For the assets included in the 1 July 2013 RAB, DEWS advised that the associated asset lives were as per the asset lives proposed by Seqwater. For capital expenditure added to the RAB since 1 July 2013, the QCA has accepted Seqwater's proposed assets lives (in the absence of relevant information).

Table 22 Asset lives

	1 July 2013 RAB	*2013-14 capex*	*2014-15 capex*	*2015-16 capex*	*2016-17 capex*	*2017-18 capex*	*2018-28 capex*
Value ($m)	8,283.6	125.3	109.3	121.1	124.2	189.9	2,085
Weighted average asset life (years)	56.84	39.48	47.83	66.74	59.17	90.72	80.09

Source: Seqwater (2014c), QCA calculations

The resulting depreciation calculated by the QCA is slightly higher than that proposed by Seqwater, due to reductions applied to capital expenditure being more than offset by a higher inflation estimate in 2013-14 (see below).

Table 23 Depreciation ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Seqwater	204.4	211.6	216.8	222.7	229.0	2,712.2
QCA	205.9	213.1	218.3	224.1	230.5	2,716.8

Note: The values reported above mid-year values. Source: Seqwater (2014c), QCA calculations.

4.10 Return on capital

4.10.1 Rate of return

The Referral requires the QCA to include a rate of return on the RAB reflecting a return on debt only, based on the long-term cost of debt as advised by the QTC. The QCA must also allow Seqwater to recover interest on and repayment of price path debt.

Logan City Council (2014) submitted that it does not expect to have to pay a commercial rate of return on Millennium drought assets.

Seqwater has submitted that:

- QTC has estimated the average book value of the long-term cost of debt to be within a range of 5.25% per annum to 7.25% per annum over the next 15 years. The rate advised by QTC is the mid-point of this range, or 6.25% per annum

- it interprets the Referral to mean that interest on price path debt is to be applied at the QTC long-term cost of debt, and that adjustments should be made over the preceding regulatory period to account for the actual cost of debt when determining price path debt at each price review.

Seqwater's cost submission has also retrospectively adjusted the cost of debt for the 2013-15 period. Although the forecast cost of debt for this period was initially 6.50% (Seqwater 2014a), the QTC has advised that the actual cost of debt is 5.90%.

The QCA notes that Seqwater's approach is consistent with the government's approach in the previous bulk water prices review. The QCA has validated that Seqwater has accurately presented the QTC's cost of debt forecasts.

Table 24 Rate of return (%)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
QTC advised cost of debt	5.90	5.90	6.25	6.25	6.25	6.25 per annum

Source: Seqwater (2014a)

4.10.2 Inflationary gain

To ensure that the total return on capital is equivalent to the cost of debt, there needs to be an adjustment to avoid double-counting of inflationary gain. This is a standard adjustment made by the QCA under its nominal framework. To estimate inflation, the QCA uses the June to June Australian Bureau of Statistics (ABS) CPI (all groups, Brisbane).

The QCA engaged Houston Kemp to assess the model submitted by Seqwater. Houston Kemp advised that the inflation rate applied to calculate depreciation - on the inflationary gain part of the asset - should be forecast inflation, since this is the rate applied at the time of the review. This means forecast inflation should be applied to calculate depreciation for historical and forecast years.

The QCA notes that Houston Kemp's comments assume a guaranteed revenue regime. However, the QCA does not provide Seqwater with a revenue guarantee. Therefore, to calculate inflationary gain and its corresponding depreciation, the QCA applies actual inflation rate for historical years, and forecast inflation rate for forecast years. The QCA understands that this is consistent with the approach used to calculate the RAB determined by the Minister.

Since Seqwater's submission, actual inflation for 2013-14 has been released. The QCA has used this updated inflation estimate to calculate inflationary gain.

Table 25 Inflationary gain (%)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Seqwater	2.5%	2.5%	2.5%	2.5%	2.5%	2.5% per annum
QCA	3.2%	2.5%	2.5%	2.5%	2.5%	2.5% per annum

Source: Seqwater (2014a).

4.10.3 Working capital

Seqwater submission

Seqwater has submitted a working capital allowance calculated as:

- return on working capital = cost of debt * (accounts receivable + inventory – accounts payable), where
- $\text{accounts receivable} = \left(\frac{\text{days receivable (45 days)}}{365}\right).\ \text{revenue}$
- $\text{inventory} = \left(\frac{\text{days in inventory (3 days)}}{365}\right).\text{operating expenditure (materials)}$
- $\text{accounts payable} = \left(\frac{\text{days payable (30 days)}}{365}\right).\text{operating expenditure (materials)}$

Seqwater noted that the QCA has previously approved the approach in water investigations including those for Gladstone Area Water Board (GAWB), Seqwater and LinkWater, and SunWater.

Seqwater applied a cost of debt of 5.90% for 2013-15 and 6.25% from 1 July 2015. Seqwater noted that working capital would have to be updated following the QCA's investigation of prices. However, based on a preliminary estimate, the working capital allowance is approximately 0.6% of Seqwater's annual revenue.

QCA analysis

In principle, the QCA agrees with the approach to the calculation of the working capital allowance proposed by Seqwater.

The QCA has confirmed however, that the terms of the contract require that the water retailers make payments in 30 days. This is the number of days receivable between the recording of credit sales and the receipt of cash from customers stipulated in Seqwater's bulk water supply agreements with water retailers.

The QCA allowed an additional 15 days receivable, or a total of 45 days, during the 2011-12 and 2012-13 GSCs investigations. The 15 days allowed was appropriate for when the service was delivered, relative to when the invoice is raised, on the assumption that the service was delivered, on average, in the middle of the month (QCA 2011).

The QCA understands that the contract terms are unchanged from the GSCs review, and therefore accepts Seqwater's proposed working capital methodology.

Table 26 Working capital ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Seqwater	65.8	79.6	82.8	90.7	99.0	1,295.2
QCA	65.8	81.3	82.6	89.2	96.9	1,274.0

Source: Seqwater (2014c), QCA calculations

4.11 Total capital costs

Table 27 Capital costs

		2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Seqwater	Return on capital	279.3	283.2	315.8	320.4	326.1	3,599.2
	Return of capital	204.4	211.6	216.8	222.7	229.0	2,712.2
	Total	483.8	494.9	532.6	543.0	555.1	6,311.3

		2013-14	2014-15	2015-16	2016-17	2017-18	2018-28
QCA	Return on capital	221.0	285.2	317.8	322.4	328.1	3,594.7
	Return of capital	205.9	213.1	218.3	224.1	230.5	2,716.8
	Total	426.9	498.3	536.1	546.5	558.6	6,311.5

Note: The values reported above are mid-year values. Totals may not add due to rounding. Source: Seqwater (2014c), QCA calculations.

4.12 Asset base roll-forward

Additions to the value of Seqwater asset base are made when capital expenditure is commissioned, and to account for the inflation of asset values. The asset base also declines in value due to depreciation. In aggregate, Seqwater asset base will increase over the five years to 2017-18.

Table 28 Asset base roll-forward ($m)

	2013-14	2014-15	2015-16	2016-17	2017-18
Opening RAB	8,283.6	8,439.1	8,539.5	8,650.9	8,761.9
Capital expenditure	98.9	107.4	121.3	124.3	195.9
Indexation	268.5	212.3	215.0	217.8	221.5
Depreciation	211.8	219.3	225.0	231.0	237.6
Closing RAB	8,439.1	8,539.5	8,650.9	8,761.9	8,941.7

Source: QCA calculations. Totals may not add due to rounding.

5 OPERATING COSTS

5.1 Introduction

Under the Referral, the QCA is required to assess the existence of robust policies and procedures relating to operating expenditure. The assessment is to have regard to good industry practices, compliance, the robustness of program planning and delivery processes and procedures.

The QCA is also required to assess the prudency and efficiency of Seqwater's operating costs. The Referral specifically requires a focus on materials and services, employees, corporate costs and electricity.

The QCA appointed CH2M HILL to assist in its assessment of these categories of operating cost.

Material items for review are typically defined as those which represent over 1% of the annual revenue requirement (QCA 2010).

All the categories of operating costs required to be reviewed by the Referral are material against such a criterion. These categories are sometimes comprised of many small sub-categories. CH2M HILL addressed larger-component sub-categories in more detail than relatively smaller sub-categories.

5.2 Policies and procedures

As for capex, CH2M HILL (2014) found Seqwater's policies and procedures for operating costs to be evolving towards good industry practice. Many of the areas identified for improvement reflected those identified for capex.

Table 29 Assessment of Seqwater's operating costs policies and procedures

Policy	*CH2M HILL assessment*	*Possible areas for improvement*
Governance	CH2M HILL noted that Seqwater's governance arrangements are at an early level of maturity with good practice processes now largely in place and expressed confidence that execution of these processes will be refined as they are used by Seqwater.	CH2M HILL stated that while there is evidence that the mechanisms of governance are progressing apace, specific instruments of approval and their content could be improved or better communicated to improve governance outcomes. To facilitate this process, CH2M HILL recommended awareness campaigns, training or broadly distributed (and standardised) guidelines.
Corporate planning	CH2M HILL noted that: (a) There is good alignment of the outcome areas (in the Strategic Plan) with legislative commitments (in the Statement of Obligations) and reasonable linkage between the outcome areas and priorities. (b) Seqwater's Annual Operations Plan has been developed in consultation with customers and fulfils the requirements of the System Operating Plan. (c) Seqwater's Water Supply Asset Plan (WSAP) does not provide a robust whole-of-system integrated approach to planning. However, Seqwater is aware of this and is improving this planning obligation through the development of the Water Security Plan. (d) Seqwater's annual reports effectively link Seqwater outcome areas to government objectives.	CH2M HILL recommended that Seqwater focus on strengthening the linkage of KPIs to defined priorities. The existing linkage is tenuous and the KPIs defined are too general in nature and insufficiently described to drive achievement or performance improvement without further substantiation.
Procurement	CH2M HILL did not identify any significant issues in its review of Seqwater's procurement approach. Policies, guidelines and templates supporting procurement were in line with State Government policy requirements and principles as well as being consistent in the message conveyed.	In reviewing specific projects and expenditures, CH2M HILL noted some instances where there was a departure from the approach presented in Seqwater's procurement policy/guideline documents. CH2M HILL recommended the development of an awareness of current arrangements among staff tasked with producing supporting documentation.

Source: CH2M HILL (2014).

CH2M HILL's findings indicated that Seqwater has committed to a range of improvements to its asset management practices.

Draft recommendation

5.1 Seqwater continue to improve its governance, corporate planning and procurement activities by improving awareness of their requirements and strengthening linkages between KPIs and corporate priorities.

5.3 Total operating costs

Seqwater (2014a) indicated that, compared to the 2012-13 budgeted operating costs of all the previous bulk water entities of $360.0 million, actual operating costs post-merger, were reduced to $265.0 million. Operating costs were further reduced to $241.6 million in 2013-14.

Seqwater's initial and revised submissions on operating costs are presented below.

Table 30 Seqwater's submissions on operating costs ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Initial submission	268.8	279.7	272.0	283.1	285.6	3,514.7
Revised submission	241.6	259.3	255.4	260.5	262.3	3,185.1

Source: Seqwater (2014a, 2014d).

Seqwater's revised operating costs budget for 2014-15 is based on a 'bottom-up' approach and an analysis of historical trends and efficiency opportunities.

To develop its forecast for 2015-16 onwards, Seqwater extrapolated from the 2014-15 budget using growth indices, cost indices, efficiency forecasts and changes in new initiatives. In addition to this extrapolation, Seqwater applied its own unallocated efficiency saving to total operating costs from 2015-16. Costs reviewed by CH2M HILL did not include Seqwater's unallocated savings.

Operating costs can be further disaggregated into employee expenses, materials and services and electricity.

Table 31 Seqwater's revised operating costs by type ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Employee expenses[a]	82.2	81.8	83.4	86.4	89.4	1,085.3
Materials and services[b]	139.4	156.9	157.2	165.9	171.1	2,004.4
Electricity	20.0	20.6	22.2	23.9	25.8	389.8
Total	241.6	259.3	262.8	276.3	286.3	3,479.5
Efficiency savings	0	0	-7.4	-15.7	-24.0	-294.4
Net operating costs	241.6	259.3	255.4	260.5	262.3	3,185.1

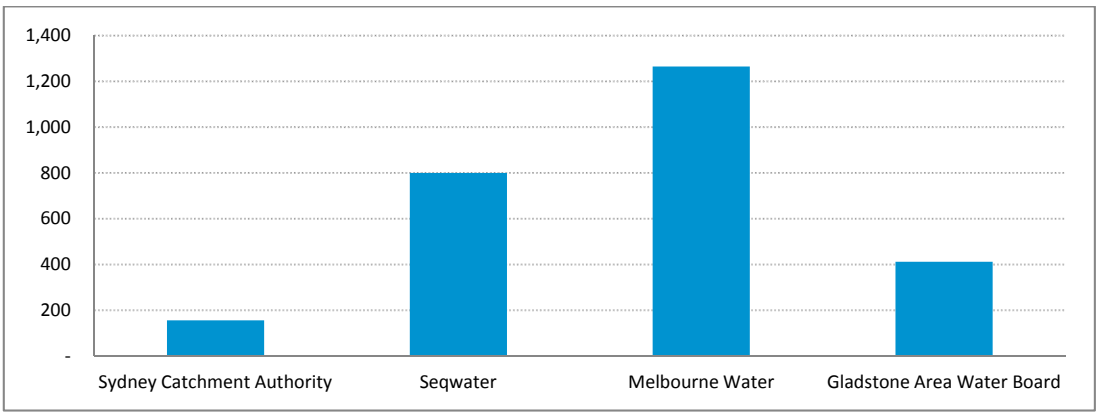
Note: a - consists of employee costs and contract labour costs b - consists of contract services, chemicals and other materials and services. Source: Seqwater (2014d).

5.4 Benchmarking

There is insufficient comparative data available to provide detailed and conclusive benchmarking of Seqwater's operating costs.

An indicative analysis of available data on bulk water entities in Australia suggests that Seqwater's operating costs were above the average for similar utilities in Australia. This can be accounted for by differences in the scope of activity, differences in population density and distances involved in delivering bulk water across Seqwater's network. Accordingly, the QCA draws no conclusions from this comparison.

Figure 6 Bulk water operating expenditure comparators 2013-14 ($/ML)



Note: Data for the Sydney Catchment Authority is for 2012-13. Source: National Water Commission (2014), CH2M HILL (2014), Melbourne Water (2014), GAWB (2014).

5.5 Employee expenses

Table 32 Seqwater's employee expenses ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Initial submission	83.8	82.9	84.6	88.9	91.9	1,117.2
Revised submission	82.2	81.8	83.4	86.4	89.4	1,085.3

Note: Figures are in nominal terms. Source: Seqwater (2014a, 2014d).

In 2014-15, employee expenses account for approximately 31.5% of total operating expenditure.

Employee expenses incorporate Seqwater's employee costs and contract labour costs.

Employee costs relate to the direct and indirect costs incurred in employing staff, including remuneration costs and staff allowances/benefits.

Contract labour costs relate to the commissioning of personnel to meet short-term staff capacity needs or to provide one-off, specialist advice to the business, where having this expertise in-house would not be cost-effective.

5.5.1 2014-15 baseline costs

Employee costs

Seqwater's submission has 29 employee cost categories (excludes contract labour) for 2013-14 which is significantly more than the 15 categories reported for 2014-15. This lack of continuity reduces the usefulness of a simple comparison between categories in both years.

CH2M HILL therefore focused its analysis on the 2013-14 actual costs, with due consideration of the factors that might influence these costs from 2013-14 to 2014-15, such as the change in full-time equivalent (FTE) employees.

Table 33 Seqwater employee costs by business group

	2013-14			*2014-15*		
	Cost ($)	***FTE***	***Cost/FTE ($)***	***Cost ($)***	***FTE***	***Cost/FTE ($)***
Asset Portfolio Development and Delivery (APDD)	16,076,759	135	119,175	15,363,327	133	115,427
CEO	2,236,436	8	279,555	3,453,176	8	431,647
Finance	6,421,065	56	114,662	7,035,644	56	125,636
General Counsel	2,505,179	19	131,852	2,974,838	19	156,570
Operations - Catchment and Raw Water (OCRW)	11,553,195	104	110,769	12,156,206	113	107,768
Operations - Treated Water (OTW)	22,874,486	205	111,856	22,985,717	206	111,853
Service, People and Technology (SPT)	10,747,696	91	117,848	8,837,553	89	99,187
Water Supply Strategy and Policy (WSSP)	5,507,056	43	128,071	6,055,155	42	144,170
Total employee costs	**77,921,872**	**661**	**117,903**	**78,861,617**	**666**	**118,500**

Note: Totals may not sum due to rounding. Source: Seqwater (2014d).

CH2M HILL singled out the following cost categories for analysis.

Salaries and wages - awards

Seqwater submitted salaries and wages costs of $58.2 million for 2014-15 which was 75% of employee costs and corresponds to an average salary per employee (excluding on-costs) of $87,393. CH2M HILL observed that this is within the range of salary/wage for similarly skilled employees in the water industry and representative of an organisation whose workforce is dominated by engineers and qualified technicians.

However, CH2M HILL noted that estimates of representative salaries for the water sector would typically include annual leave costs. As Seqwater estimated annual leave costs separately from salaries and wages, CH2M HILL estimated Seqwater's annual leave costs ($4.5 million) and reduced Seqwater's submitted costs by this estimate resulting in salaries and wages costs of $53.7 million in 2014-15.

The QCA accepts this recommendation.

Annual leave

This cost category shows a real decrease of 78% from 2013-14 to 2014-15. CH2M HILL believed that the process employed in producing the 2014-15 figures may be flawed. CH2M HILL noted that the 2013-14 cost (at $5.1 million) is very close to what would be expected if all staff members took their allocated four weeks of leave each year. CH2M HILL believed this is the best approach to determining future leave liabilities.

CH2M HILL estimated that if all staff took their four weeks of annual leave every year, annual leave costs would amount to $4.5 million in 2014-15. This amounts to an upward adjustment of $3.3 million to Seqwater's submitted costs.

Annual leave loading

CH2M HILL noted that Seqwater's annual leave loading is approximately 15% of its annual leave costs in 2014-15. Therefore the total annual leave loading that is consistent with CH2M HILL's recommended annual leave costs of $4.5 million is $0.7 million.

CH2M HILL recommended revising Seqwater's submitted annual leave costs ($0.6 million) accordingly, which results in an upward adjustment of $0.1 million.

The QCA accepts this recommendation.

Workers' compensation

This cost category shows a real increase of 115% from 2013-14 to 2014-15, which cannot be attributed to the real increase in WorkCover premiums. CH2M HILL recommended that the 2014-15 cost be determined by applying the 2013-14 per unit cost (escalated to 2014-15) to the 2014-15 FTE figures. CH2M HILL's recommendation results in a downward annual adjustment of $0.3 million from 2014-15. The QCA accepts CH2M HILL's recommendation.

Summary

CH2M HILL's recommended adjustments applicable until 2027-28 are shown in the table below.

Table 34 CH2M HILL recommended adjustments 2014-15 ($m)

	Seqwater submitted	*QCA recommended*	*Adjustments*
Salaries and Wages - award	58.2	53.7	-4.5
Annual Leave	1.2	4.5	3.3
Annual Leave Loading	0.6	0.7	0.1
Workers' Compensation Expenses	0.6	0.3	-0.3
Total	60.5	59.1	-1.4

Note: Figures are in nominal terms. Totals may not sum up due to rounding. Source: CH2M HILL (2014).

The QCA accepts CH2M HILL's recommended adjustments.

Contract labour

Seqwater's contract labour costs account for approximately 5.2% ($4.2 million) of total employee expenses in 2013-14, and are forecast to reduce to 3.6% (or $2.9 million) in 2014-15. CH2M HILL stated that the most comprehensive source of information on an appropriate benchmark for contract labour as a proportion of total employees is the Adecco Temporary Labour Report 2013 which found that temporary labour made up 3.8% of the total workforce and was increasing at a rate of approximately 2% per annum. On this basis CH2M HILL estimated a benchmark proportion of contract labour of between 3.5% and 5.0% (CH2M HILL 2014) and accepted Seqwater's estimates.

5.5.2 Forecast growth in wages 2015-28

Employee costs

Seqwater applied separate escalation rates to forecast its employee costs for its Enterprise Bargaining Agreement (EBA) period and its post-EBA period.

EBA escalation

CH2M HILL commended Seqwater for the efficiency initiative within the current EBA arrangement that offers staff a bonus for achieving a defined operational efficiency dividend.

The EBA includes both guaranteed and contingent increases, which are based on cost savings being realised. The contingent component of the salary increase is based on an assessment by Seqwater every six months.

Seqwater's financial reports on this initiative demonstrate that the operational efficiencies to date have more than offset the salary increment - that is, Seqwater is realising more than enough cash savings from staff-initiated operational efficiencies to fund the wage increase.

Seqwater has adopted a wage increase of 2.5% per annum over the three-year period of the EBA from July 2013 to June 2016 (reflecting the average of the potential annual increases for 2013-14, 2014-15 and 2015-16 identified below).

Table 35 Guaranteed and contingent increases agreed in Seqwater's EBA (%)

Effective date	*Guaranteed wage increase (%)*	*Contingent wage increase (%)*	*Total increase (%)*
July 2013	2.0		2.0
January 2014		0.5	0.5
July 2014	1.5	0.5	2.0
January 2015		0.5	0.5
July 2015	1.0	1.0	2.0
January 2016		0.5	0.5

Source: Seqwater EBA, p.8.

CH2M HILL noted that the QCA preferred approach in its price monitoring of SEQ water businesses was to escalate employee costs in line with EBAs (QCA 2014a). This was particularly evident in the recent review of Gold Coast Water's retail water price where the QCA rejected a proposed escalation factor that was over and above that in the employee agreement covering the entire regulatory period. Consequently, CH2M HILL considered Seqwater's employee costs escalation factor of 2.5% over the term of the agreement appropriate.

As Seqwater's EBA provides an innovative approach to obtaining operational efficiencies, CH2M HILL recommended that Seqwater's EBA escalation be accepted. QCA accepts CH2M HILL's recommendation.

Post-EBA escalation

From 2016-17 onwards Seqwater adopted PwC's recommended annual escalation factor of 3.5%. This is based on Wage Price Indices (WPI) forecasts published by Queensland Treasury and Trade (QTT) as part of the 2013-14 Budget Strategy and Outlook that covers the period from 2013-14 to 2016-17, extrapolated over the forecast period to 2027-28.

Table 36 Wage price index forecasts, Queensland

Source	*2013-14*	*2014-15*	*2015-16*	*2016-17*	*2017-18*
2013-14 Budget	3.50%	3.50%	3.50%	3.50%	Not stated

Source: QTT (2013).

PwC stated that its estimate aligns closely with historical growth in the Queensland WPI, which has averaged 3.6% annually over the past 15 years. Further, its estimate is less than historical growth in the national Electricity, Gas, Water and Waste Services (EGWWS) sector WPI, which has averaged 4.1% over the same period.

CH2M HILL noted that the WPI forecasts were updated in the 2014-15 Budget as shown below.

Table 37 Wage price index forecasts: Queensland

Source	*2013-14*	*2014-15*	*2015-16*	*2016-17*	*2017-18*
2014-15 Budget	2.75%	3.0%	3.25%	3.5%	3.5%

Source: QTT (2014).

Despite the variation in year on year WPI, the forecast WPI for 2016-17 remains at 3.5%. Based on a review of historical wage levels in the EGWWS sector, historical movement in the Queensland WPI and the updated WPI forecast, CH2M HILL considered Seqwater's employee costs escalation factor of 3.5% over the period from 2016-17 to 2027-28 should be accepted.

The QCA accepts CH2M HILL's recommendation.

Contract labour

To forecast its contract labour costs, Seqwater applied the escalation rates advised by PwC and outlined below. The escalation rates applied to forecast years (2015-16 onwards) are broadly in line with those applied to escalate employee costs.

Table 38 Seqwater proposed contract labour escalation rates

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18 to 2027-28*
Escalation rate	3.46%	3.46%	3.38%	3.38%	3.38% per annum

Source: PwC (2014).

CH2M HILL considered the contract labour escalation rates proposed to be reasonable and appropriate and therefore recommended that they should be adopted.

The QCA accepts CH2M HILL's recommendation.

5.5.3 Forecast growth in FTEs 2015-28

Seqwater forecast an increase of 0.7% in its FTEs, which are mostly in the Operations - Catchment and Raw Water business group.

CH2M HILL noted that Seqwater is implementing a more rigorous asset management approach for natural assets that would account for this increase. CH2M HILL endorsed this proposed change, as the water industry in general does not manage natural assets well. CH2M HILL noted however, that the boundary between SPT and the other business groups from a functional perspective is not distinct, and some of the corporate communications function might be delivered through the Operations - Catchment and Raw Water business group, despite it being largely an SPT function.

Seqwater plans to implement new systems under a 'Software as a Service' (SaaS) arrangement to reduce its non-core staff demand. CH2M HILL noted that the implementation of SaaS not only reduces the requirement for ICT staff, but also requires a different skill base for its efficient management/administration.

However, a reduction in the cost related to SaaS implementation is likely to be offset to some degree by an increase in operational expenditure driven by SaaS subscription payment. Further, SaaS delivery is at an early stage of maturity worldwide and there is limited research available to establish the level of staff reduction that may apply to a given business. CH2M HILL estimated an annual saving of $1.6 million in real terms should be applied from 2017-18 onwards.

5.5.4 Other adjustments to employee expenses 2015-28

Seqwater submitted a range of adjustments to employee expenses over the forecast period. CH2M HILL's assessment and recommendations are summarised below.

Table 39 Adjustments to employee expenses

Expense item	*Seqwater submission*	*CH2M HILL recommendation*	*QCA response*
APDD	An increase in employee costs, for this business unit, of $0.2 million (in real terms) in each of 2016-17 and 2017-18 and $0.1 million (in real terms) per annum from 2018-19.	Reject the proposal as there is insufficient information to justify it.	The QCA accepts CH2M HILL's recommendation.
SPT	An increase in employee costs, for this business unit, of $0.2 million (in real terms) per annum from 2016-17 to cover pro-rata IT costs.	Reject the proposal as there is insufficient information to justify it.	The QCA accepts CH2M HILL's recommendation.
OCRW	Employee cost savings of $0.6 million (in real terms) in 2015-16 and $0.7 million per annum (in real terms) from 2016-17.	Accept these savings as Seqwater has appropriately documented the source of these savings.	The QCA accepts CH2M HILL's recommendation.

Source: CH2M HILL (2014).

5.5.5 Summary

The QCA accepts CH2M HILL's conclusions relating to escalation rates, and has applied them to CH2M HILL's proposed reductions to costs as outlined above.

Table 40 Revised employee expenses ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Seqwater revised submission	82.2	81.8	83.4	86.4	89.4	1,085.3
CH2M HILL recommended reductions	-	-1.4	-1.6	-1.9	-3.8	-45.8
QCA total	82.2	80.4	81.8	84.5	85.6	1,039.6

Note: Figures are in nominal terms. Totals may not add due to rounding. Source: Seqwater (2014d), QCA calculations.

5.6 Materials and services

Seqwater's materials and services costs include:

- contract services (the outsourcing of services, such as maintenance and water quality monitoring, to third-party providers)
- chemicals (used by Seqwater for water treatment purposes)

- other materials (used by internal and external staff for maintenance purposes).

Table 41 Seqwater's submissions on materials and services costs ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Initial submission	162.7	175.8	173.9	186.5	192.5	2,280.6
Revised submission	139.4	156.9	157.2	165.9	171.1	2,004.4

Note: Figures are in nominal terms. Source: Seqwater (2014a, 2014d)

Under the revised submission, Seqwater has budgeted for growth in materials and services costs of 13% in 2014-15 relative to actual costs in 2013-14.

Table 42 Materials and services costs from 2013-14 to 2014-15 ($m)

	2013-14	*2014-15*	*% change*
Contract services	81.1	96.2	19%
Chemicals	12.7	14.3	13%
Other	45.6	46.4	2%
Total	139.4	156.9	13%

Note: Figures are in nominal terms. Totals may not sum up due to rounding. Source: Seqwater (2014d).

5.6.1 2014-15 baseline costs

Contract services

The main contributors to cost increases in contract services between 2013-14 and 2014-15 were Veolia contract costs, consultancies and contractors. These increases were offset, to some extent, by decreases in water quality/environmental management, and catchment panel contracts.

CH2M HILL considered contract services costs to be prudent as they were incurred by Seqwater to fulfil its regulatory, legislative and operational obligations.

Given the large number of cost categories, CH2M HILL reviewed the most significant sources of growth that could not be immediately explained.

Training - external

The costs of external training were $0.3 million in 2013-14 and are forecast to increase by $0.4 million in 2014-15.

CH2M HILL noted that Seqwater had not provided sufficient justification for this cost increase and recommended that the 2014-15 forecast be reduced to 2013-14 levels.

The QCA accepts this recommendation.

Consultancies - information technology

The costs of information technology related consultancy services were $2.3 million in 2013-14 and are forecast to increase by $1.9 million in 2014-15. These costs were $0.8m in 2012-13.

CH2M HILL noted that the majority of the proposed expenditure is to be procured by the SPT business group. While Seqwater's submission indicates that a significant component of this business unit's costs relate to ICT service provision, CH2M HILL noted that the submission allocates these costs to the other materials and services cost category and not the contract services category.

Given the lack of justification for the substantial cost increase, CH2M HILL recommended that the 2014-15 forecast for this cost category should be reduced to 2013-14 levels.

The QCA accepts this recommendation.

Consultancies - other

Costs related to undifferentiated consultancy services were $2.4 million in 2013-14 and are forecast to increase by $5.1 million in 2014-15. These costs were $1.7m in 2012-13.

CH2M HILL noted that while Seqwater stated a need for additional consultancy services for a range of business and operational improvement initiatives, the initiatives identified either represent one-off expenditures that should not be continued beyond 2014-15 or ongoing expenditures that should already be captured in 2013-14 actual expenditure.

On this basis, CH2M HILL recommended that the 2014-15 forecast for this cost category should be reduced to 2013-14 levels.

The QCA accepts this recommendation.

Control system maintenance services

Costs related to maintenance of control systems under the established maintenance panel arrangement were $0.4 million in 2013-14 and are forecast to increase by $1.0 million in 2014-15. These costs were $0.3 million in 2012-13.

CH2M HILL noted that significant consolidation and upgrade work is planned for a subset of control systems (maintenance control systems, or MCS) and that these consolidation and upgrade costs are captured separately in the forecast costs for ICT.

However, Seqwater did not substantiate why a significant increase is also required for the maintenance of other control systems. Furthermore, a significant business case driver for consolidation and upgrade of the MCS is a reduction in ongoing operational costs for the system. In the absence of valid substantiation of these costs, CH2M HILL recommended that the 2014-15 forecast for this cost category be reduced to 2013-14 levels.

The QCA accepts this recommendation.

Electrical maintenance services

Costs related to maintenance of electrical equipment under the maintenance panel arrangement were $2.7 million in 2013-14 and are forecast to increase by $2.1 million in 2014-15. These costs were $2.7 million in 2012-13.

CH2M HILL indicated that Seqwater had not substantiated this cost increase. CH2M HILL therefore recommended that this cost category be reduced to 2013-14 levels.

The QCA accepts this recommendation.

Salaries and wages

Costs related to salary and wage expenses under the Veolia maintenance services contract were $8.2 million in 2013-14 and are forecast to decrease by $1.0 million in 2014-15. These costs were $2.3 million in 2012-13.

CH2M HILL noted that Seqwater's submission references a 4% increment in Veolia labour costs as a result of an EBA roll-over, but the proposed change is more likely to be a result of changes in Veolia staff numbers. Insufficient information was provided to enable CH2M HILL to form a holistic view of Veolia staff utilisation or requirements. CH2M HILL recommended that the

2014-15 forecast for this cost category be accepted on the condition that justification for the costs is provided.

The QCA expects that Veolia's maintenance costs at the WCRWS should decline substantially as it is being decommissioned. In the absence of the further justification expected by CH2M HILL, the QCA cannot consider this cost to be efficient. In the absence of justification for this increase and as Veolia's costs are expected to decline significantly, the QCA has therefore removed this cost from the 2014-15 forecast.

Repair and maintenance projects

Costs related to repair and maintenance projects under the Veolia maintenance services contract were $0.3 million in 2013-14 but forecast to increase by $2.1 million in 2014-15. These costs were $0.4 million in 2012-13.

CH2M HILL noted that additional information has been provided by Veolia for the WCRWS (with no further information received on the GCDP) which does not support a significant increase in repair and maintenance projects. In the absence of valid substantiation of these costs, CH2M HILL recommended that the 2014-15 forecast for this cost category be adjusted to the average of 2012-13 and 2013-14 expenditures ($0.3 million).

The QCA accepts this recommendation.

Summary

The QCA's adjustments to Seqwater's submitted costs are summarised below.

Table 43 QCA adjustments to Seqwater's 2014-15 contract services costs ($m)

Cost category	*Seqwater submitted*	*QCA recommended*	*Adjustments*
Training - external	0.7	0.3	-0.4
Consultancies - information technology	4.3	2.3	-1.9
Consultancies - other	7.5	2.4	-5.1
Control System Maintenance Services	1.4	0.4	-1.0
Electrical Maintenance Services	4.8	2.7	-2.1
Salaries and Wages	7.2	-	-7.2
Repair and Maintenance Projects	2.4	0.3	-2.1
Total	**28.2**	**8.4**	**-19.8**

Note: Figures are in nominal terms. Total may not sum due to rounding. Source: Seqwater (2014d), QCA calculations.

Overall, the CH2M HILL reviewed 29% of Seqwater's submitted costs for contract services and recommended reductions worth 21% of the submitted costs. There is insufficient information to suggest these are representative of other categories, and it is noted that there was no forecast increase in these costs for 2014-15.

Chemicals

The key contributors to chemical cost increases between 2013-14 and 2014-15 were variable chemical costs at WTPs and chemical costs at the GCDP and WCRWS. These cost increases were partly offset by a decrease in fixed chemical costs.

CH2M HILL reviewed variable chemical costs and chemical costs associated with the GCDP and WCRWS. CH2M HILL did not review fixed chemical costs as they make up only 4% of chemical costs and are forecast to decrease slightly over time.

Variable chemical costs

Variable chemical costs are a function of water demand, chemical prices and the quality of raw water available to WTPs. Raw water quality, in turn, is affected by weather events with high rainfall periods leading to degradation in raw water quality.

CH2M HILL reviewed the cost of three chemicals used to treat water at WTPs (alum, hydrated lime and sodium hypochlorite) which make up 71% of variable chemical costs. CH2M HILL also undertook a high-level review of 'other chemicals' as a group. On the basis of this review, CH2M HILL recommended reductions to the other chemicals cost category.

Actual costs for other chemicals in 2013-14 were $2.8 million and are forecast to increase by $0.6 million in 2014-15.

CH2M HILL sought and obtained further information from Seqwater which indicated that there had been a clerical error in the calculation of other chemicals costs. CH2M HILL therefore recommended a reduction of $0.2 million in 2014-15.

The QCA accepts this recommendation.

Chemical costs for the Gold Coast Desalination Plant

Chemical costs for the GCDP were $0.4 million in 2013-14 and were initially forecast to increase to $0.6 million in 2014-15. This was based on a total volume of 1,860 ML in 2013-14 and 1,241 ML in 2014-15.

CH2M HILL noted that, at a $/ML level, the difference in cost between 2013-14 and 2014-15 is relatively high ($197.7/ML in 2013-14 compared to $445.1/ML in 2014-15). This increase is largely attributable to an increase in the cost of lime.

CH2M HILL sought and received further information from Seqwater which, however, indicated that the forecast of chemical costs for 2014-15 should be $0.3 million (or $296.8/ML) and not $0.6 million (or $445.1/ML), as supplied originally. This resembles an increase of 50%, or $99.1/ML, in 2014-15.

As this increase had not been satisfactorily justified by Seqwater, CH2M HILL recommended applying the $/ML cost from 2013-14 to 2014-15 volumes. This results in a cost of $0.3 million in 2014-15.

Summary

The QCA's adjustments to Seqwater's submitted costs are summarised below.

Table 44 QCA adjustments to Seqwater's 2014-15 chemical costs ($m)

Cost category	*Seqwater submitted*	*QCA recommended*	*Adjustments*
Other chemicals	3.4	3.3	-0.2
GCDP	0.6	0.3	-0.3
All other	10.4	10.4	-
Total	14.3	13.7	-0.5

Note: Figures are in nominal terms. Source: Seqwater (2014d), QCA calculations. Table may not add due to rounding.

Other materials and services

Other materials and services costs are forecast to decrease by $7.2 million in 2014-15 to $14.1 million.

CH2M HILL noted that this may result from a re-categorisation of some costs as corporate costs.

CH2M HILL reviewed other materials and services relating to corporate costs but found no inefficiencies for 2014-15.

5.6.2 Forecast materials and services prices 2015-28

Contract services

Seqwater submitted a materials and services escalation factor developed by PwC based on a sample of Seqwater's service contracts and accepted regulatory practice in Australia.

PwC proposed a weighted index based on the following indices (and weights):

- forecast of the Queensland WPI (38%)
- forecast of CPI based on RBA estimates (15%)
- 10-year average of the non-residential building construction index, Queensland (46%).

After reviewing PwC's methodology, CH2M HILL stated that it considered Seqwater's proposed approach to escalating contract services costs to be reasonable. However CH2M HILL recommended adjusting Seqwater's weighted escalation rate for updated information for each of the indices adopted by PwC. CH2M HILL did not make any changes to PwC's proposed weightings. In summary, CH2M HILL recommended that the QCA accept the updated escalation rates.

Table 45 Weighted escalation rates for contract services (%)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-28*
Seqwater submitted	3.46	3.46	3.38	3.38	3.38 per annum
CH2M HILL recommended	2.54	2.53	2.73	2.75	2.75 per annum

Source: PwC (2014), CH2M HILL (2014).

The QCA accepts CH2M HILL's recommended escalation rates.

Chemicals

PwC noted regulatory precedents for applying the CPI to escalate chemical costs as it is transparent, repeatable and easily accessible.

CH2M HILL noted that water retailers in SEQ have typically used the RBA's CPI forecast to escalate chemical costs. CH2M HILL noted that the QCA has supported and accepted this approach. For these reasons, CH2M HILL recommended Seqwater's proposed approach to be appropriate.

However, CH2M HILL recommended adjusting Seqwater's proposed escalation factors for 2014-15 and 2015-16 in line with the RBA's latest forecasts for CPI. Given the level of uncertainty of inflation from 2016-17 onwards, CH2M HILL recommended Seqwater's use of the mid-point of the RBA inflation target (2.5%) to be appropriate.

Table 46 Escalation rates for chemical costs (%)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-28*
Seqwater submitted	3.00	3.00	2.50	2.50	2.50 per annum
CH2M HILL recommended	3.00	2.25	3.00	2.50	2.50 per annum

Source: PwC (2014), CH2M HILL (2014).

The QCA accepts CH2M HILL's recommended escalation rates.

Other materials and services

PwC noted that while CPI, and the basket of goods it represents, may not align directly with Seqwater's other materials and services costs it is likely to provide the most accurate forecast given the lack of suitable alternatives. PwC also noted that this approach has been accepted by the QCA in recent pricing reviews.

CH2M HILL considered these arguments to be reasonable. However, CH2M HILL adjusted Seqwater's forecast escalators to reflect the most recent update of the RBA's mid-point forecast for CPI for 2014-15 and 2015-16. Given the level of uncertainty of inflation from 2016-17 onwards, CH2M HILL recommended Seqwater's use of the mid-point of the RBA inflation target (2.5%) to be appropriate.

CH2M HILL's recommended adjustments are presented below.

Table 47 Escalation rates for other materials and services costs (%)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-28*
Seqwater submitted	3.00	3.00	2.50	2.50	2.50 per annum
CH2M HILL recommended	3.00	2.25	3.00	2.50	2.50 per annum

Source: PwC (2014), CH2M HILL (2014).

The QCA accepts CH2M HILL's recommended escalation rates.

5.6.3 Other adjustments to materials and services costs 2015-28

Seqwater submitted a range of adjustments to materials and services costs over the forecast period. CH2M HILL's assessment and recommendations are summarised below.

Table 48 Adjustments to materials and services costs

Expense item	*Seqwater submission*	*CH2M HILL recommendation*	*QCA response*
Contract services	A $0.5 million increase (in real terms) every three years to cover the cost of any consultancy required to enable a response to QCA price reviews.	Reject the proposal on the basis that Seqwater's submitted costs for 2014-15 already include an allocation of $0.6 million per annum for this purpose.	The QCA notes that the $0.6m per annum budgeted by Seqwater relates to regulatory fees charged directly by the QCA and does not cover any consultancy costs that Seqwater may incur in preparing its regulatory submissions. Seqwater's allocated cost of $0.5 million to cover any consultancy costs is therefore prudent and efficient.

Expense item	*Seqwater submission*	*CH2M HILL recommendation*	*QCA response*
Chemical costs associated with the WCRWS	Chemical disposal costs of $0.2 million per annum from 2014-15.	Reject the proposed allocation of costs beyond 2014-15 as the costs are one-off disposal costs associated with the shutdown of the scheme in 2014-15.	The QCA accepts CH2M HILL's recommendation.
Operations - treated water	Increase of $4.1 million (in real terms) in sludge handling costs form 2019-20.	Reject the proposal as there is insufficient information to justify it.	The QCA accepts CH2M HILL's recommendation.
SPT	Seqwater proposed an increase in expenditure for 'pro-rata' ICT costs of $0.6 million per annum from 2016-17.	Reject proposal given lack of sufficient justification.	The QCA accepts CH2M HILL's recommendation.
WSSP	Seqwater proposed an increase in expenditure for this cost category of $1.3m (in real terms) every three years to account for QCA regulatory fees.	Reject the proposal as Seqwater has already made an allowance for QCA fees in its forecast corporate cost expenditure.	The QCA accepts CH2M HILL's recommendation.
ICT - hardware support and maintenance	Seqwater proposed an increase of $0.2 million per annum from (in real terms) 2015-16.	Recommended rejecting this increase due to lack of sufficient justification.	The QCA accepts CH2M HILL's recommendation.
Legal expenses - real estate and commercial property law	Seqwater proposed an increase of $0.1 million (in real terms) from 2015-16.	Recommended rejecting this increase due to lack of sufficient justification.	The QCA accepts CH2M HILL's recommendation.
Global Positioning Systems	Seqwater proposed an annual expenditure of $0.3 million (in real terms) from 2015-16.	Recommended reducing this to $0.1 million per annum as these systems typically have a useful live of three years and need only be replaced on a three yearly basis.	The QCA accepts CH2M HILL's recommendation.
QCA fees	Seqwater included an annual allowance of $0.6 million per annum from 2016-17 to cover regulatory fees charged directly by the QCA.	CH2M HILL noted that the QCA fees are only levied two out of every three years. CH2M HILL therefore recommended removing the allowance of $0.6 million in every third year of the forecast period commencing in 2016-17.	The QCA accepts CH2M HILL's recommendation.

Note: Figures are in nominal terms. Source: CH2M HILL (2014).

In addition to the above adjustments, Seqwater proposed some efficiency savings which were also assessed by CH2M HILL.

APDD

CH2M HILL noted that Seqwater has identified savings in contract services costs for the APDD business unit totalling $80 million over the forecast years.

CH2M HILL identified some references in Seqwater's written submission that help to substantiate these savings (including substantial reductions in engineering and technical support as near-term projects are completed) but noted that there was insufficient detail on the year-on-year adjustments.

CH2M HILL recommended that the proposed efficiencies remain in the operational expenditure forecasts but noted that more detail on the method of calculation of these adjustments would be useful.

The QCA accepts CH2M HILL's recommendations.

Chemicals

Seqwater submitted that a Chemical Improvement Management Plan is under development which will drive efficiency across sourcing, contractual arrangements, stock management, and on-site management.

Seqwater also stated WTP processes are being optimised and standardised to ensure:

- improved performance assessment and optimisation through technology advances
- operations modelling to determine peak efficiency
- individual WTPs run at optimal levels of efficiency, reliability and risk.

CH2M HILL stated that these efficiencies are not fully quantified or captured in Seqwater's actual and forecast chemical costs and noted that it was difficult, from the available information, to determine whether Seqwater is able to obtain short-term efficiencies in the use of chemicals.

CH2M HILL recommended that Seqwater establish a baseline $/ML for each WTP based on optimum performance and a stipulated feed water quality so Seqwater can better define any chemical cost efficiencies.

In the 2012-13 GSCs review, the QCA accepted Seqwater's suggestion to formulate an average raw water quality measure for each WTP based on multiple years of raw water quality data.

In future reviews, the QCA would expect Seqwater's submission to include a baseline $/ML for each WTP.

Other efficiency savings

Seqwater proposed annual reductions of:

- $0.25 million (in real terms) in costs allocated to class action communication support from 2015-16
- $4.20 million (in real terms) reflecting the end of payments to Unitywater for the supply of recycled water from the Murrumba Downs Advanced Water Treatment Plant from 2020-21
- $0.98 million (in real terms) reflecting a fall in class action costs from the 2011 floods and completion of the major framework projects from 2015-16.

CH2M HILL considered these savings to be prudent and efficient and recommended that the QCA accept them.

The QCA accepts CH2M HILL's recommendation.

5.6.4 Summary

The QCA has adjusted Seqwater's submitted costs to account for revised escalation rates and efficiency gains. A summary of the adjustments is provided below.

Table 49 Seqwater's materials and services costs ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Seqwater submitted	139.4	156.9	157.2	165.9	171.1	2,004.4
QCA adjustment	-	-21.5	-22.8	-25.5	-27.9	-415.3
QCA recommended	139.4	135.4	134.5	140.5	143.3	1,589.0

Note: Figures are in nominal terms, excludes corporate costs, totals may not sum up due to rounding. Source: Seqwater (2014d), QCA calculations.

5.7 Electricity

Seqwater uses electricity primarily (97.5%) for the operation of its WTPs and pump stations. The remainder of its electricity use is for dams and properties.

As noted above, Seqwater revised its initial submission, and included a change to forecast electricity costs.

Table 50 Seqwater's submissions on electricity costs ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Initial submission	22.2	27.4	28.9	31.1	33.6	512.1
Revised submission	20.0	20.6	22.2	23.9	25.8	389.8
Difference	–2.3	–6.8	–6.7	–7.2	–7.8	–122.3

Source: Seqwater (2014a, 2014d)

Seqwater indicated that the change reflected the removal of carbon costs (as a result of the abolition of the carbon tax which took effect from 1 July 2014) and energy adjustments for the supply system and the WCRWS (Seqwater 2014c).

A detailed comparison of initial and revised costs is presented below for 2013-14 and 2014-15. Total electricity costs were revised downwards by 13.9%.

Table 51 Seqwater's initial and revised electricity costs: 2013-14 and 2014-15 ($m)

Cost category	*Initial submission*		*Revised submission*	
	2013-14	*2014-15*	*2013-14*	*2014-15*
Energy - Variable (e.g. WTP)	12.9	16.5	11.3	13.9
Energy - Carbon Tax (variable)	2.8	3.6	2.6	-
Energy - Fixed (e.g. Admin Bldg)	0.8	0.7	0.7	0.6
Energy - Network Energy Cost - WTP Fixed	5.3	6.5	5.0	6.1
Energy - Carbon Tax (fixed)	0.2	0.1	0.1	-
VC - Energy - Electricity Other - Fixed	0.3	-	0.3	-
Total	22.2	27.4	20.0	20.6

Note: Totals may not add up due to rounding. Source: Seqwater (2014a, 2014d), QCA analysis.

Under the revised submission, Seqwater has budgeted for growth in electricity costs of 3.0% in 2014-15 relative to actual costs in 2013-14. This reflects the removal of the carbon tax being offset by a forecast increase in electricity prices of 5.7%.

For 2015-28, Seqwater has forecast electricity costs by escalating the 'baseline' electricity costs for 2014-15 using forecast growth rates in electricity prices and consumption.

5.7.1 2014-15 Baseline electricity costs

Seqwater requires electricity for a range of its activities. These can be categorised according to whether electricity is supplied to large or small sites.

Seqwater's large sites are assets that use more than 100 MWh of energy per annum and include Mt Crosby Treatment Plant (MTP), GCDP and the majority of its other treatment plants and pump stations.

As the supply of electricity to large sites makes up 90% of Seqwater's electricity costs, the QCA has focused its analysis on these sites.

Table 52 Breakdown of Seqwater's revised electricity costs for 2013-28 ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Large sites	18.0	18.6	20.1	21.7	23.4	356.0
Small sites	2.0	2.0	2.1	2.2	2.3	33.7
Total	20.0	20.6	22.2	23.9	25.8	389.8

Source: Seqwater (2014d), QCA analysis

Seqwater's submission disaggregated electricity costs into energy costs and network costs. As this information was insufficient to enable a detailed analysis of electricity costs, the QCA sought additional information on Seqwater's electricity contract with ERM for large sites.

Seqwater submitted that, it did not have actual data on network charges and that it relied on forecast network charges for the revised submission. This results in a slight difference, in the composition of electricity costs for 2014-15, between Seqwater's revised submission and its contractual information. However, total electricity costs from the revised submission correspond closely to total electricity costs from the disaggregated contractual data.

Table 53 Seqwater's revised submission and contractual information for 2014-15 ($m)

Cost component	*Seqwater's revised submission*	*Seqwater's electricity contract*[a]
Energy	-	6.5
Environment	-	1.0
Network variable	-	6.6
Total variable	12.8	14.1
Network fixed	5.8	4.2
Other fixed	-	0.2
Total fixed	5.8	4.4
Total	18.6	18.5

Note: contract costs include a 4% efficiency factor, as advised by Seqwater. Source: Seqwater (2014a, 2014e), QCA analysis.

As the contract contains the most up-to-date data on energy and network charges and Seqwater provided updated consumption data, at a disaggregated level, for large sites, the QCA has based its analysis on this data.

Energy costs

Seqwater's electricity contract includes energy costs of $6.5 million for 2014-15.

Seqwater's energy costs are a function of energy charges ($/MWh) and Seqwater's annual electricity consumption (MWh).

Energy charges

Seqwater's retail electricity supply contract specifies the amount and structure of carbon exclusive energy charges for calendar years 2014 and 2015 for:

- peak, shoulder and off-peak periods for MTP and GCDP
- peak and off-peak periods for all other large sites.

Seqwater reviewed alternative electricity charge structures and concluded that the three-tier pricing structure for MTP and GCDP has the potential to optimise costs having regard to operating, peak production and management of pumping regimes, thereby leading to cost savings.

Seqwater provided the QCA with information on its electricity procurement process which indicates that ERM's tender provided the best value for money. Further, ERM was the only tender to offer a three-tier pricing structure for MTP and GCDP.

On the basis of this information, the QCA accepts that Seqwater's energy charges are prudent and efficient.

Electricity consumption

Seqwater has forecast electricity consumption for 2014-15 based on its historical consumption (MWh) per ML of water produced and consistent with its contracted consumption with ERM.

The QCA notes that Seqwater's contract with ERM includes financial penalties for consumption that varies significantly from the contracted consumption.

The QCA considers that Seqwater's electricity consumption for 2014-15 is prudent and efficient, on the basis that not only does it align with historical patterns of consumption (averaging 130 GWh per year), but Seqwater also has an incentive to be accurate with its forecast under the contract with ERM.

Summary

Seqwater's estimates of energy charges and electricity consumption for 2014-15 are considered to be prudent and efficient. The QCA therefore accepts Seqwater's energy costs of $6.5 million for 2014-15 to be efficient.

Environmental costs

ERM incurs costs as part of compliance with the Commonwealth Government's renewable energy scheme (RES) and passes these costs on to Seqwater. The RES has two components: the small-scale renewable energy scheme (SRES) and the large-scale renewable energy target (LRET).

SRES

Seqwater advised that ERM estimated its obligation under the SRES to be $0.5 million in 2014-15.

The SRES sets targets for the amount of electricity to be generated from small-scale installations such as solar panel systems. Under the scheme, ERM has a legal obligation to buy small-scale technology certificates (from renewable energy generators) and surrender these to the Clean Energy Regulator.

A government guaranteed price of $40 per certificate applies, which the QCA estimates to be equivalent to $4/MWh in 2014-15 (QCA 2014b).

Based on this information and Seqwater's submitted electricity consumption of 130 GWh for 2014-15, the QCA has verified an SRES liability of $0.5 million to be efficient.

LRET

Seqwater advised that ERM estimated its obligation under the LRET to be $0.5 million in 2014-15.

The LRET sets annual targets for the amount of electricity that must be generated by large-scale renewable energy projects like wind farms. Under the scheme, ERM must purchase a number of large-scale generation certificates (LGCs) that is determined on the basis of achieving the annual target.

The price of LGCs is determined by the market and has varied between $10 per certificate and $60 per certificate (or between $1/MWh and $6/MWh) in the past.

Based on a market price of $3.70/MWh and electricity consumption of 130GWh for 2014-15, the QCA has verified that an LRET liability of $0.4 million would be efficient.

However, Seqwater has its own LGCs which it acquired as part of the construction arrangement for the GCDP and has transferred to ERM for the term of the electricity contract (Seqwater 2014a). These LGCs are enough to cover ERM's liability and ERM is therefore able to avoid the cost of purchasing LGCs as required under the LRET and passes this cost saving on to Seqwater.

Seqwater submitted that, while it has enough LGCs to cover the LRET obligation, it should be compensated for this cost as it has not previously benefited from these certificates and has not been compensated for the cost of purchasing these certificates.

In the 2012-13 GSCs review, the QCA noted that the government had discontinued the requirement to offset carbon emissions at the GCDP and that it was no longer appropriate to recover LGC costs. However, Seqwater was compensated for the decline in the LGCs' value from when Seqwater had been required to acquire them. The QCA considered that the least cost option would be to sell the excess LGCs.

Seqwater however chose to retain the LGCs, foregoing the revenue from their sale, and use them to offset its retail electricity costs. If Seqwater had sold the LGCs, as recommended, it would not be able to offset its LRET costs.

The QCA accepts that Seqwater has chosen to bear the risk of the changes in the market price for LGCs and therefore accepts that the full cost of LRET compliance is an efficient cost.

Summary

The QCA has accepted Seqwater's submitted SRES and LRET liabilities.

Network costs

Network costs consist of a fixed component which is a function of the fixed network connection charge ($/connection/day) and the fixed network capacity charge ($/kVA/month); and a variable component which is a function of peak demand charges ($/kVA/month or $/kW/month), and variable network charge ($/MWh).

Fixed network costs

Seqwater submitted fixed network costs of $4.2 million for 2014-15.

These costs are a function of the fixed network charges for using the electricity distribution and transmission networks that Powerlink and Energex (the relevant transmission and distribution companies) pass on to Seqwater through ERM. As these charges are regulated by the Australian Energy Regulator (AER), the QCA considers them to be efficient.

Variable network costs

Seqwater submitted variable network costs of $6.6 million for 2014-15.

The QCA sought information from Seqwater about variable network charges applying to each of its large sites under its electricity contract.

Variable network charges are regulated by the AER, the QCA considers them to be efficient

As Seqwater's electricity consumption for 2014-15 is prudent and efficient and Seqwater's variable network charges are also prudent and efficient, the QCA considers that Seqwater's submitted fixed network costs are efficient.

Summary

Seqwater's estimates of network charges and electricity consumption for 2014-15 are considered to be prudent and efficient. The QCA therefore accepts Seqwater's network costs of $11.1 million for 2014-15 to be efficient.

5.7.2 Total baseline electricity costs

Seqwater's submitted 2014-15 electricity costs (based on its contract with ERM) and the QCA's revisions are summarised below.

Table 54 Electricity costs for large sites in 2014-15 ($m)

	Energy costs	*Environmental costs*	*Network costs*[a]	*Other costs*	*Total*
Seqwater submitted	6.5	1.0	10.9	0.2	18.6
QCA recommended	6.5	1.0	10.8	0.2	18.5
Variance	-	-	-0.1	-	-0.1

Source: Seqwater (2014a, 2014d), QCA calculations.

5.7.3 Forecast electricity prices 2015-28

Seqwater is forecasting growth in overall electricity prices of 6.03% per annum over the period 2015-28 based on the average annual growth rate (between 2013 and 2028) of SKM MMA's electricity price index for Queensland industrial customers under the medium scenario. This forecast was recommended by PwC based on its expectation that 'while future price growth is likely to moderate compared with recent historical trends, it is unlikely that major cost drivers will dissipate to the point where no real growth occurs' (PwC 2014).

PwC presented historical trends in electricity prices which show that, in the five years to 2007, electricity prices in Brisbane (and Australia) increased at a compound annual rate of 3.6% (and 3.2%) which was higher than the inflation rate of 2.7% over this period. From 2007 to 2013, Brisbane and Australia-wide electricity prices averaged a much higher rate of growth (11.2% and 12.5% respectively).

PwC also presented forecasts by the Australian Energy Market Operator (AEMO) based on assumptions of growth in wholesale, network, retail and environmental costs (including carbon costs). The AEMO provides forecasts for each of three scenarios (based on high, medium and low demand assumptions). Over the 10 years to 2023, the medium forecast is for price growth to moderate significantly averaging 0.2% in real terms.

The major driver of increased prices over the last few years has been network costs. The AER has noted that these costs have peaked and are likely to moderate in the short term (AER 2013). The QCA expects that these costs have peaked and should increase by no more than inflation in the short term.

Wholesale energy costs may increase in the short term due to local gas prices increasing to meet international prices.

On balance, it could be expected that prices could increase by the CPI in the short term (that is, 2015-18). This would see a price increase of 2.5% per annum over this period.

Over the medium to longer term, electricity prices are likely to continue to moderate (AER, 2013). These cost decreases may be somewhat offset by the adoption of more expensive renewable energy sources (Ibisworld 2013). On balance, the QCA considers that an annual increase in electricity prices of 2.7% (slightly higher than expected inflation), as forecast by the AEMO, is appropriate over the period 2018-28.

5.7.4 Forecast electricity consumption 2015-28

Seqwater submitted that, for 2015-28, it has forecast constant electricity consumption (MWh) per ML of water produced. Therefore forecast growth in electricity consumption depends entirely on growth in water volumes.

The QCA has previously concluded that the key driver of energy use is bulk water volumes (QCA 2014a). The QCA notes that it is required to accept Seqwater's forecasts of demand so long as they are consistent with the requirements in the Referral.

Seqwater's forecast of electricity demand growth is consistent with the water use forecasts required in the Referral. The QCA has therefore accepted Seqwater's forecast of average annual growth rate of 3% over the period 2015-28.

5.7.5 Summary

Seqwater initially submitted electricity costs of $23.9 million for 2014-15 and subsequently revised this figure down to $20.6 million mainly reflecting the removal of the carbon tax.

For 2015-18 the QCA has escalated prices by 2.5% per annum and consumption by 3.0% per annum resulting in an overall increase of 5.6% per annum over this period.

For 2018-28, the QCA has escalated prices by 2.7% per annum and consumption by 3.0% per annum resulting in an overall increase of 5.8% per annum over this period.

The table below presents a summary of Seqwater's submitted costs and the QCA's recommended electricity costs over the period 2013-28.

Table 55 Recommended electricity costs ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Seqwater revised submission	20.0	20.6	22.2	23.9	25.8	389.8
Adjustments	-	-0.1	-0.6	-1.1	-1.6	-56.9
QCA recommended	20.0	20.5	21.6	22.8	24.1	332.9

Note: Figures are in nominal terms, includes corporate electricity costs. Totals may not sum up due to rounding.
Source: Seqwater (2014d), QCA calculations.

5.8 Corporate costs

Seqwater's corporate costs include: general management, corporate office and board costs; legal counsel; human resource management; risk and insurance management; environment management property management; financial management.

Seqwater advised that operating expenditure that it cannot readily allocate or attribute to a specific site is categorised as corporate costs.

Table 56 Seqwater's submissions on corporate costs ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Initial submission	79.5	83.7	84.1	91.4	96.1	1067.6
Revised submission	69.3	77.8	78.5	81.8	86.3	952.7

Note: Figures are in nominal terms. Source: Seqwater (2014a, 2014d)

Under the revised submission, Seqwater has budgeted for growth in corporate costs of 12.2% in 2014-15 relative to actual costs in 2013-14. Costs that contribute to a corporate *function* include cost *types* that have been reviewed above, such as employee costs and electricity.

Table 57 Corporate costs from 2013-14 to 2014-15 ($m)

	2013-14	*2014-15*	*% change*
Employee costs	29.6	30.1	1.7
Materials and services	39.6	47.6	20.5
Electricity	0.2	0.1	-67.0
Total	69.3	77.8	12.2

Note: Figures are in nominal terms. Source: Seqwater (2014d)

Corporate costs are comprised entirely of the cost categories reviewed by the QCA above. As a result, the QCA's recommended reductions in the preceding sections already include reductions to corporate costs.

Summary

The QCA has adjusted Seqwater's submitted costs to account for revised escalation rates and efficiency gains. A summary of the adjustments is provided below.

Table 58 Seqwater's corporate costs ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Seqwater submitted	69.3	77.8	78.5	81.8	86.3	952.7
QCA adjustment	-	-2.4	-2.6	-4.2	-6.3	-77.8
QCA recommended	69.3	75.3	75.9	77.6	80.0	874.8

Note: Figures are in nominal terms, totals may not sum up due to rounding. Source: Seqwater (2014d), QCA calculations.

5.9 Operating costs summary

The QCA has reviewed Seqwater's operating costs and made some adjustments which are summarised below.

Table 59 Revised operating costs 2013-28 ($m)

	Seqwater submitted	*QCA recommended*	*Adjustments*
Employee expenses	1,508.5	1,454.0	-54.5
Materials and services	2,795.0	2,282.1	-512.8
Electricity	502.3	442.0	-60.3
Unallocated efficiency savings	341.5	-	+341.5
Total	4,464.3	4,178.1	-286.1

Note: Figures are in nominal terms, table may not sum up due to rounding. Source: Seqwater (2014d), QCA calculations.

Draft recommendation

5.2 Seqwater's forecast operating expenditure for 2013-28 be reduced by $286.1 million.

6 TOTAL COSTS

6.1 Bulk water costs

Bulk water costs are predominantly made up of capital costs and operating costs, discussed in the preceding chapters. However, Seqwater has submitted that adjustments must be made to take into account tax payable and revenue offsets.

6.1.1 Tax

Seqwater submission

Seqwater has submitted that it:

- adopts the cost of debt of 6.25% as the rate of return on assets and the interest rate on price path debt for the period 1 July 2015 to 30 June 2028. This implies Seqwater's capital structure is 100% debt, there is no equity component in its rate of return, and therefore no return on equity or associated gamma assumption
- has adopted a nominal, post-tax modelling approach consistent with the QCA's standard practice, and therefore tax costs are included in the cash flows rather than the rate of return
- will incur tax losses in the early years of the price path which will be eroded in later years because of the mismatch over time between revenues and costs. Projected accumulated tax losses as at 30 June 2015 are $852 million.

Seqwater has proposed two options for determining tax costs:

(1) the building blocks 'theoretical' tax assuming Seqwater's annual revenues are notionally the annual bulk water costs

(2) the tax arising from the forecast price path revenues from 2014-15 to 2027-28. These revenues differ from the bulk water costs because revenue is less than bulk water costs in the early years of the price path, and then exceeds it in later years to recover past price path debt.

Seqwater prefers option (2) because price path revenues drive Seqwater's tax costs. Seqwater's preliminary analysis suggested that tax losses will offset tax payable to 2027-28 with no tax costs to be recovered through prices.

QCA analysis

The QCA normally uses a nominal post-tax weighted average cost of capital (WACC) as the rate of return on regulated assets. Consistent with its WACC approach, the QCA includes an allowance for tax payable as part of total costs.

The QCA's estimate of tax payable is normally calculated as tax rate of 30% (adjusted for the effects of dividend imputation) applied to taxable income.

However, the Referral's direction to adopt the cost of debt as the rate of return precludes use of the QCA's normal post-tax WACC approach. Under a cost-of-debt rate of return, earnings before interest and tax are fully offset by interest expense, resulting in a taxable income of zero.

As the cash flows relating to the return on capital and the price path debt already include the effects of taxation (being zero), no further adjustments are necessary.

So-called accumulation tax losses are effectively revenue under-recoveries which are recouped in later years of the price path through price modelling assumptions.

6.1.2 Revenue offsets

Seqwater nominated revenue offsets of $28.1 million in 2014-15. The revenue offsets relate to lease revenue and income earned by Seqwater through the sale of water to customers other than the SEQ water retailers. These customers include irrigators, power stations and local governments outside of SEQ. This revenue is offset against total costs so that Seqwater does not over-recover the cost of providing water to these customers. This cost is not separately identified by Seqwater, but included in the total costs presented above.

Following a review of Seqwater's submission, the QCA identified that Seqwater was also earning revenue from holders of water entitlements in irrigation water supply schemes that were not irrigators. In response to the QCA's queries, Seqwater identified an additional $0.6 million of revenue offsets in 2014-15 for raw water sales to non-irrigators, predominantly the Gympie Regional Council.

The QCA has therefore applied a total revenue offset of $28.7m in 2014-15, rising to $31.7 million in 2017-18.

Table 60 Revenue offsets ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-20*
Irrigators	0.3	0.3	0.3	0.3	0.3	3.9
Power stations	16.2	16.8	17.2	17.9	18.5	0.0
Toowoomba Regional Council	4.8	5.0	5.1	5.3	5.5	11.6
Gympie Regional Council	0.3	0.3	0.3	0.4	0.4	4.5
Other raw water sales to non-irrigators	5.8	6.2	6.4	6.8	7.0	74.3
Total	27.5	28.7	29.4	30.6	31.7	94.3

Source: Seqwater (2014a, 2014f)

6.1.3 Total bulk water costs

Logan City Council (LCC) (2014) submitted SEQ already pays amongst the highest bulk water charges in the nation. LCC will look to the QCA to review the costs being incurred by SEQ customers and look to ways that these costs can be reduced.

The QCA acknowledges Logan's concern and supports further initiatives by Seqwater to realise further savings.

The QCA's draft recommended bulk water costs are 2.5% or $329 million lower than submitted by Seqwater's over the 2013-28 period.

Table 61 Seqwater's total bulk water costs ($m)

	Cost	*2013-14*	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Seqwater	Capital costs	483.8	494.9	532.6	543.0	555.1	6,311.3
	Operating Costs	241.6	259.3	255.4	260.5	262.3	3,185.1
	Tax	–	–	–	–	–	–
	Revenue offsets	-27.5	-28.7	-29.4	-30.6	-31.7	-94.3
	Total bulk water costs	697.8	725.4	758.6	773.0	785.7	9,402.2
QCA	Capital costs	426.9	498.3	536.1	546.5	558.6	6,311.5
	Operating Costs	241.6	236.3	237.9	247.8	253.0	2,961.5
	Tax	–	–	–	–	–	–
	Revenue offsets	-27.5	-28.7	-29.4	-30.6	-31.7	-94.3
	Total bulk water costs	640.9	705.9	744.6	763.7	780.0	9,178.7

Note: Total may not add due to rounding. Source: QCA calculations.

6.1.4 Efficiency Targets

In previous reviews of GSCs for Seqwater and LinkWater, the QCA recommended the application of prospective productivity gains and targets applied by Australia regulators in recent decisions.

For the purposes of the draft report, the QCA has not sought to do so noting that:

- Seqwater has self-nominated an efficiency gain to capex of 5% over 2015-18 which the QCA has adopted where it has not sampled capex items
- the CH2M HILL analysis of operating cost categories was quite comprehensive
- many of the QCA's identified savings result from insufficient justification of proposed capex and opex and are subject to further submissions and analysis prior to completion of the final report
- CH2M HILL considered it difficult to quantify efficiencies from its policies and procedures findings and has not sought to extrapolate its findings relating to individual cost items.

6.2 Price path debt

In addition to the costs of providing bulk water in any given year, the Referral requires prices to recover interest on and repayment of price path debt.

The Minister of Energy and Water Supply has advised a 1 July 2013 price path debt of $1,840 million.

Moreton Bay Regional Council (MBRC) (2014) submitted that the price path debt should be written off by the government and not recovered from future water prices, as this does not match the cost of the water to its consumption and it is inequitable to charge costs incurred today on future users.

MBRC noted that if the decision is made to proceed with this proposal, then the government should ensure that each council area repay the debt as allocated to that area.

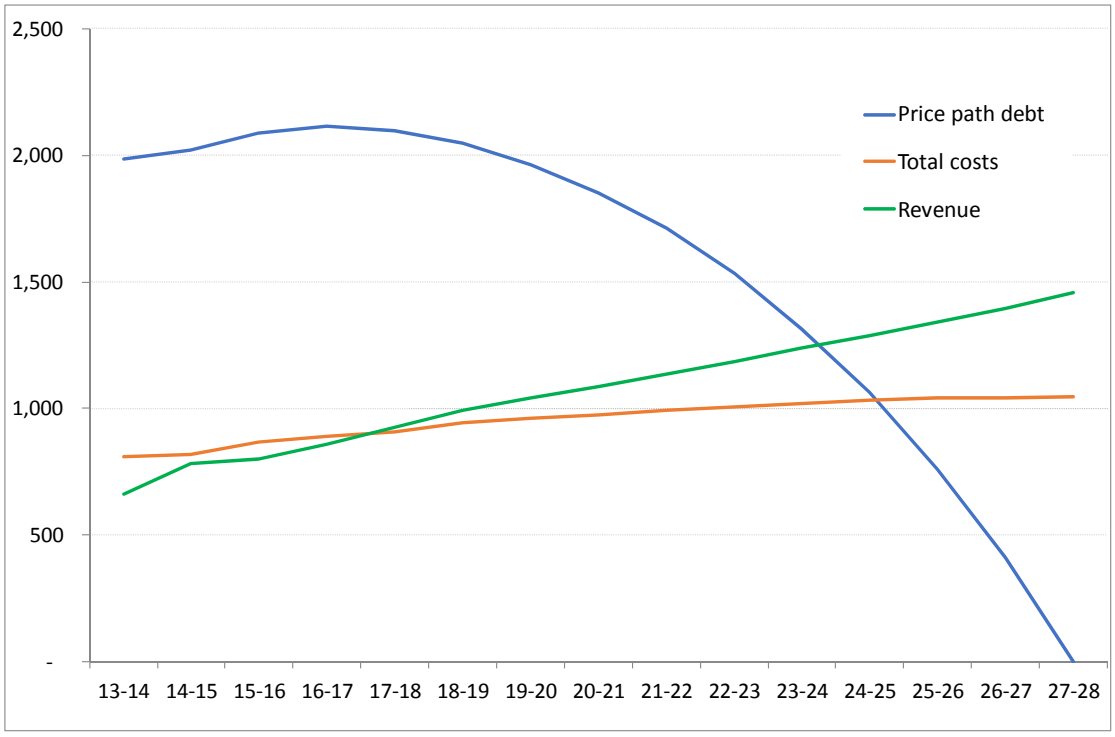
The Referral requires Seqwater to recover price path debt, as determined by the Minister for Energy and Water Supply. The price path debt advised by the Minister is not disaggregated by council area.

The QCA's recommended prices therefore must include repayment of price path debt and cannot distinguish price path debt by council area.

6.2.1 Repayment of price path debt

The requirements of the Referral mean that price path debt rises over the first part of the price path as Seqwater under-recovers, and then gradually declines to $0 as Seqwater's revenues start to exceed its costs. The QCA has calculated that the tipping point, or peak in price path debt occurs in 2016-17.

Figure 7 Price path debt repayment ($m)



Note: Price path debt is as at 30 June. Source: QCA calculations

6.2.2 Interest on price path debt

Seqwater has submitted that the interest of price path debt should be the same as the cost-of-debt rate used to calculate return on assets. Such an approach reflects the government's past practice and is therefore accepted.

Table 62 Interest rate on price path debt (%)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
QTC advised cost of debt	5.90	5.90	6.25	6.25	6.25	6.25 per annum

Source: Seqwater (2014a)

The level of price path debt, combined with the interest rate advised by QTC determines the amount of interest on price path debt that Seqwater must recover. This interest has been added to Seqwater's bulk water costs to determine total costs.

Table 63 Price path debt ($m)

	2013-14	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-19*	*2019-20*	*2020-21*	*2021-22*	*2022-23*	*2023-24*	*2024-25*	*2025-26*	*2026-27*	*2027-28*
Price path debt opening balance	1,841	1,928	1,961	2,032	2,066	2,052	2,010	1,933	1,830	1,695	1,523	1,310	1,060	762	411
Increase (repayment) of price path debt	-21	-78	-50	-90	-139	-165	-196	-217	-242	-269	-299	-322	-354	-387	-424
Interest on price path debt	108	111	121	124	125	123	120	114	107	98	86	72	55	36	13
Price path debt closing balance	1,928	1,961	2,032	2,066	2,052	2,010	1,933	1,830	1,695	1,523	1,310	1,060	762	411	–

Source: QCA calculations.

6.3 Total costs

Total costs describe the total amount that Seqwater is entitled to recover in any given year. Total costs, in conjunction with demand and the approach to the bulk water price path, determine Seqwater's bulk water prices.

In total, since the start of the price path debt advised by the Minister (1 July 2013), the QCA recommends $14.2 billion of total costs, including $1.4 billion of interest on price path debt.

Table 64 Total costs ($m)

Cost	*2013-14*	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-28*
Bulk water costs	640.9	705.9	744.6	763.7	780.0	9,178.7
Interest on price path debt	108.0	111.5	121.0	124.2	124.9	823.1
Total costs	748.9	817.4	865.6	888.0	904.8	10,001.8

Source: QCA calculations.

Draft recommendation

6.1 Bulk water prices reflect total costs of $14.2 billion over 2013-28.

7 PRICES

7.1 Introduction

The Referral requires the QCA to recommend Seqwater's bulk water prices for eleven council areas from 1 July 2015 to 30 June 2018. The recommended prices must recover prudent and efficient costs incurred between 1 July 2008 and 30 June 2028, by 30 June 2028, and the repayment of price path debt by 2027-28.

From 2007 to early 2012, the Queensland Government made significant investments in the SEQ bulk water supply system. In 2008, the government decided to phase in bulk water price increases to cover related costs. This was implemented by a bulk water 'price path' that provides for annual price increases over a 10-year period, starting in 2008–09.

Bulk water prices were most recently reset by the government in 2013 for the 2013-15 period. The government also published 'indicative prices' for 2015-18. During the 10-year price path, bulk water prices would not recover the full costs of supplying bulk water. Seqwater is selling bulk water at a loss, which is being funded by debt (DEWS 2014c).

7.2 Actual and indicative bulk water price path

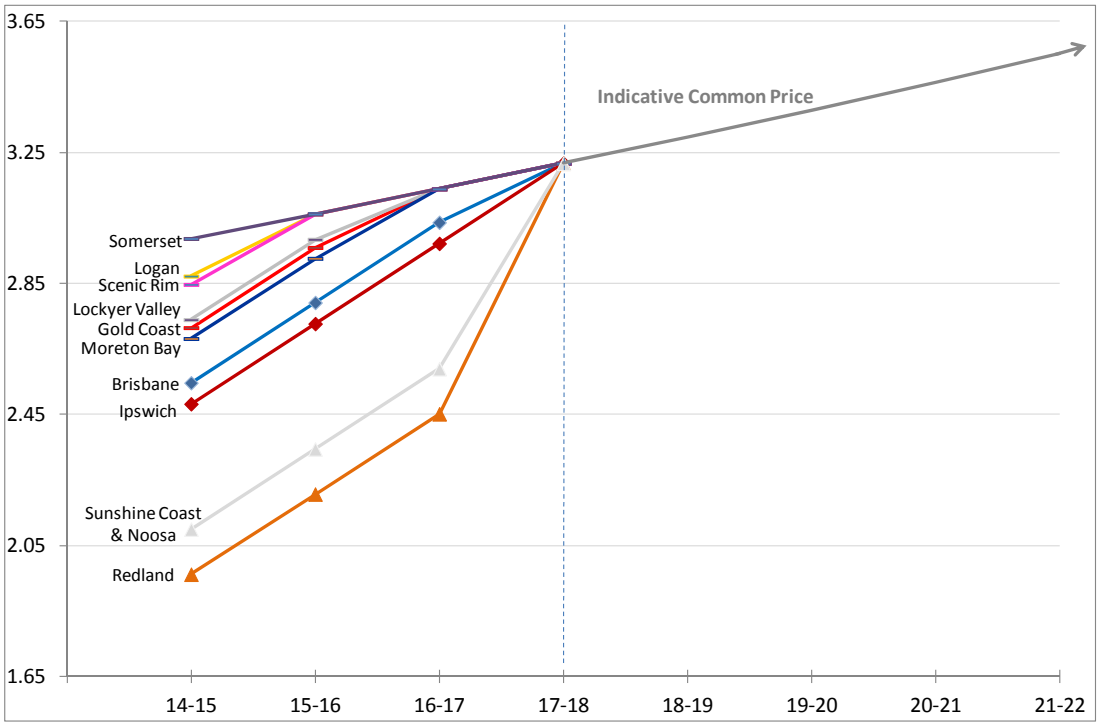
Bulk water prices for 2013-15, followed by three years of 'indicative prices' for 2015-18, are below.

Table 65 Actual and indicative bulk water prices ($/kL)

Council	*2013-14*	*2014-15*	*2015-16**	*2016-17**	*2017-18**
Brisbane	2.30	2.55	2.79	3.04	3.22
Gold Coast	2.47	2.72	2.96	3.14	3.22
Ipswich	2.24	2.48	2.73	2.97	3.22
Lockyer Valley	2.50	2.74	2.99	3.14	3.22
Logan	2.63	2.87	3.06	3.14	3.22
Moreton Bay	2.44	2.68	2.93	3.14	3.22
Scenic Rim	2.60	2.85	3.06	3.14	3.22
Somerset	2.87	2.99	3.06	3.14	3.22
Redland	1.72	1.96	2.21	2.45	3.22
Sunshine Coast & Noosa	1.86	2.10	2.35	2.59	3.22

*Note: *'Indicative' prices announced at the last price determination. The government published prices in dollars per megalitre (ML). There are 1000 kL in a ML. Source: DEWS (2014c)*

Figure 8 Actual and indicative bulk water prices ($/kL)



Source: DEWS (2014c)

The indicative bulk water price path is based on all council areas having a common price by the end of the price path in 2017-18. Those councils with significantly lower starting prices were to have large increases to reach the common price in 2017-18.

Under the indicative price path, council areas would reach the common price in the following years:

- Somerset: 2014-15
- Logan and Scenic Rim: 2015-16
- Gold Coast, Lockyer Valley and Moreton Bay: 2016-17
- Brisbane, Ipswich, Sunshine Coast (including Noosa) and Redland: 2017-18.

7.3 QCA bulk water price path

7.3.1 Referral

The Referral requires that the QCA recommend prices as follows:

- The price for each council area, except for Redland, Sunshine Coast and Noosa, is to increase so that all councils pay the same price from 2017-18 (the common price).
- The price for each council area is to increase annually to achieve the common price in the following way:
  - For councils yet to reach the common price (other than Redland, Sunshine Coast and Noosa) prices must increase by the same dollar per megalitre each year (the 'common price increase').

  - Where the common price increase is higher than necessary for a specific council area to reach the common price, the increase required for the council area to reach the common price should be applied.
  - Once a council area reaches the common price, its price should increase each year by inflation only.
- Prices are to remain constant in real terms once the common price has been reached until 2017-28.
- Prices are to be volumetric only.

The QCA is also to recommend the price path and the impact on bulk water debt of extending the price path arrangements for Redland, Sunshine Coast and Noosa by two years.

Unitywater (2014) submitted its concern about the distortionary impact of purely volumetric charge to recover Seqwater's costs, the majority of which are related to existing sunk investments. Unitywater was concerned that a fully volumetric price could encourage the development of inefficient water supply options that are only viable because of the customer's ability to avoid the very high variable water charge.

The QCA notes Unitywater's concerns but under the Referral prices are to remain volumetric only.

Unitywater also advocated increased transparency of bulk water costs and saw significant value in disaggregating bulk water charges into major cost components.

The QCA cannot disaggregate bulk water prices by major cost component, as prices do not reflect costs in any given year. However, the QCA considers that the detailed description and analysis of Seqwater's annual costs presented in the preceding chapters achieves a much greater level of transparency than in previous bulk water price decisions.

7.3.2 The common price

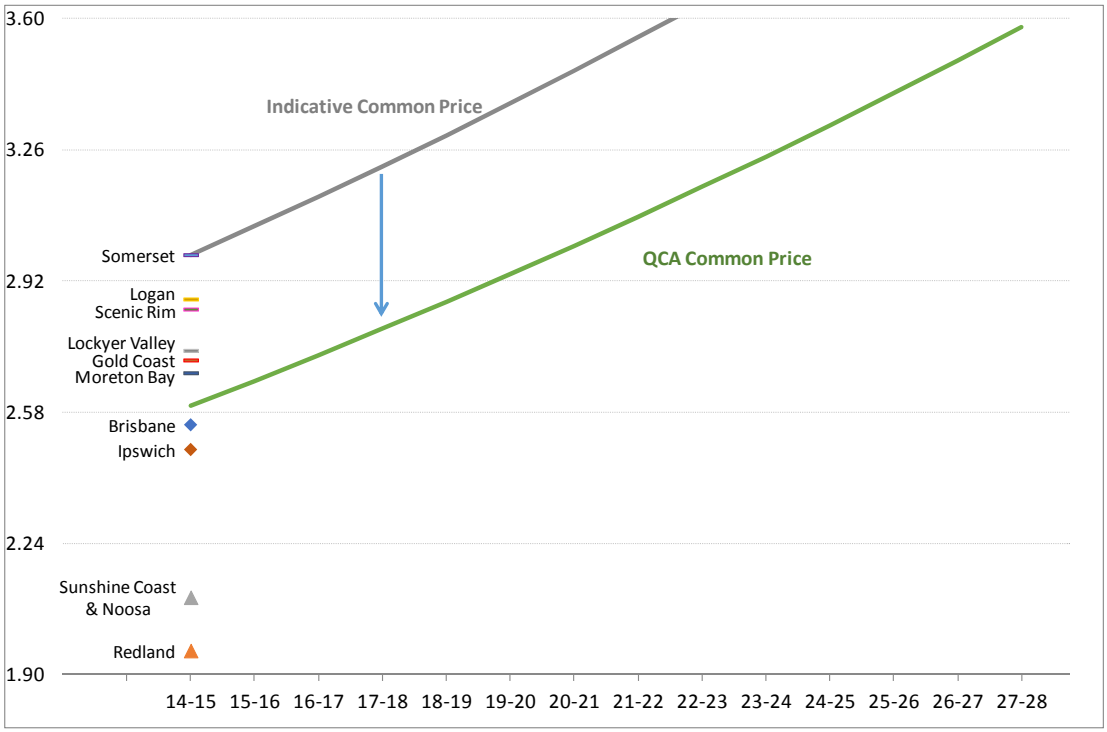
Seqwater's costs have declined below those previously adopted by government to set indicative prices. This is due to:

- lower actual and estimated actual capital expenditure in 2011-12 to 2013-14
- lower actual CPI in 2011-12 and 2012-13 (0.90% and 1.99% respectively, versus that adopted in the 2013 review of 2.50%), lowering the regulated asset base (RAB) as at 1 July 2013 and, other things being equal, the return on and return of capital
- lower cost of debt return (5.9% for 2013-15 and 6.25% for 2015-28 in Seqwater's submission versus 6.50% for 2013-28 in the 2013 review)
- lower post-merger actual and Seqwater estimates of forecast capital expenditure (capex) and operating expenditure (opex)
- the QCA's lower estimates of prudent and efficient costs.

MBRC (2014) submitted that the restructure of the bulk water entities from five to one entity and the resultant efficiency gains should translate to lower bulk water prices.

Reflecting the lower costs, the QCA has calculated a draft common price of $2.77/kL in 2017-18. The QCA's common price in 2017-18 is 14%, or $0.45, lower than the indicative common price announced by the government in 2013 ($3.22/kL).

Figure 9 Indicative vs QCA common price ($/kL)



Source: DEWS (2014c), QCA calculations

The common price applies from 2017-18 (except for Redland, Sunshine Coast and Noosa). However, if a council area reaches the common price before 2017-18, prices must increase by inflation only. The common price can therefore be extended back to 2014-15 by adjusting the 2017-18 common price by inflation. As shown above Somerset reached the inflation adjusted common price in 2014-15.

Using the QCA common price, three distinct groups of council areas can be identified:

- Brisbane and Ipswich, which are below the common price in 2014-15
- Somerset, Logan, Scenic Rim, Lockyer Valley, Gold Coast and Moreton Bay, which are above the common price
- Sunshine Coast, Noosa and Redland, which are below the common price and for which prices are to reflect a two-year extension to reach the common price by 2019-20.

Draft recommendation

7.1 A common price of $2.77/kL apply in 2017-18 (and increase thereafter by CPI) for all council areas except Redland, Sunshine Coast and Noosa.

7.3.3 Price path for Brisbane and Ipswich

The 2014-15 bulk water prices for Brisbane and Ipswich are below the QCA's common price.

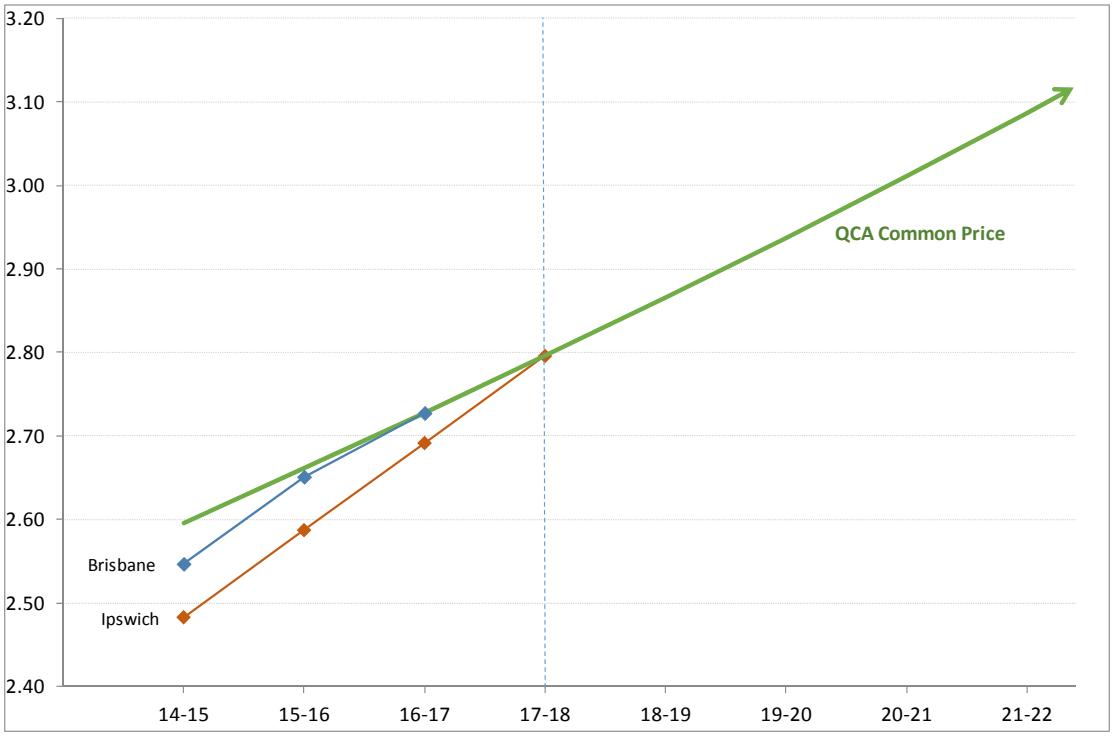
Brisbane City Council (2014) submitted that price increase should be smoothed out for individual local governments to avoid any sharp price shocks.

However, under the Referral, the 'common price increase' must apply until the common price is reached. The common price increase is calculated so that the lowest price in these regions in 2014-15 will reach the common price in 2017-18.

Ipswich's 2014-15 price is $0.29/kL below the 2017-18 draft common price. Ipswich's draft price must therefore rise by $0.10/kL in each of the three years of the 2015-18 price path to reach the common price in 2017-18. The common price increase is therefore $0.10/kL per year.

In accordance with the Referral, Brisbane's draft price must rise by the common price increase of $0.10/kL in 2015-16 and in 2016–17 by only the amount necessary to reach the common price - that is, $0.07/kL.

Figure 10 Brisbane and Ipswich draft recommended price path ($/kL)



Source: QCA calculations

In summary, the QCA recommends that prices for Brisbane increase by 3.6% in 2015-16 and thereafter by CPI. Draft recommended prices also increase for Ipswich by an average of 3.7% per annum to 2017-18 and increase thereafter by CPI.

Draft recommendation

7.2 The bulk water price for Brisbane increase by 3.6% in 2015-16 (and by CPI thereafter). The price for Ipswich increase by an average of 3.7% per annum to 2017-18 (and thereafter by CPI).

7.3.4 Price path for Somerset, Logan, Scenic Rim, Lockyer Valley, Gold Coast and Moreton Bay

Under the Referral, prices must increase to reach the common price in 2017-18. However, the 2014-15 bulk water prices in these six council areas are already above the calculated common price for 2014-15.

If prices were only to increase, Somerset's price (the highest in SEQ in 2014-15) would set an effective common price and all prices would have to increase to that level by 2017-18 (by 2019-20 for Redland, Sunshine Coast and Noosa) requiring significant increases in prices.

The Treasurer has, since the issuance of the Referral, clarified that the QCA is not fettered with respect to the direction of the price adjustments it recommends (**Appendix B**).

If prices of council areas above the QCA common price were to be maintained in nominal terms some, such as Somerset, would not reach the QCA's common price until 2021-22. This, however, would breach the requirement under the Referral for all council areas (other than Redland, Sunshine Coast and Noosa) to meet the common price in 2017-18. This may also be perceived as unfair, as customers must pay higher prices when costs increase, but not lower prices when costs decrease.

To achieve the common price by 2017-18 prices for these councils two options are evident:

(1) Prices fall to the common price immediately (in 2015-16).

(2) Prices adjust gradually, meeting the common price in 2017-18.

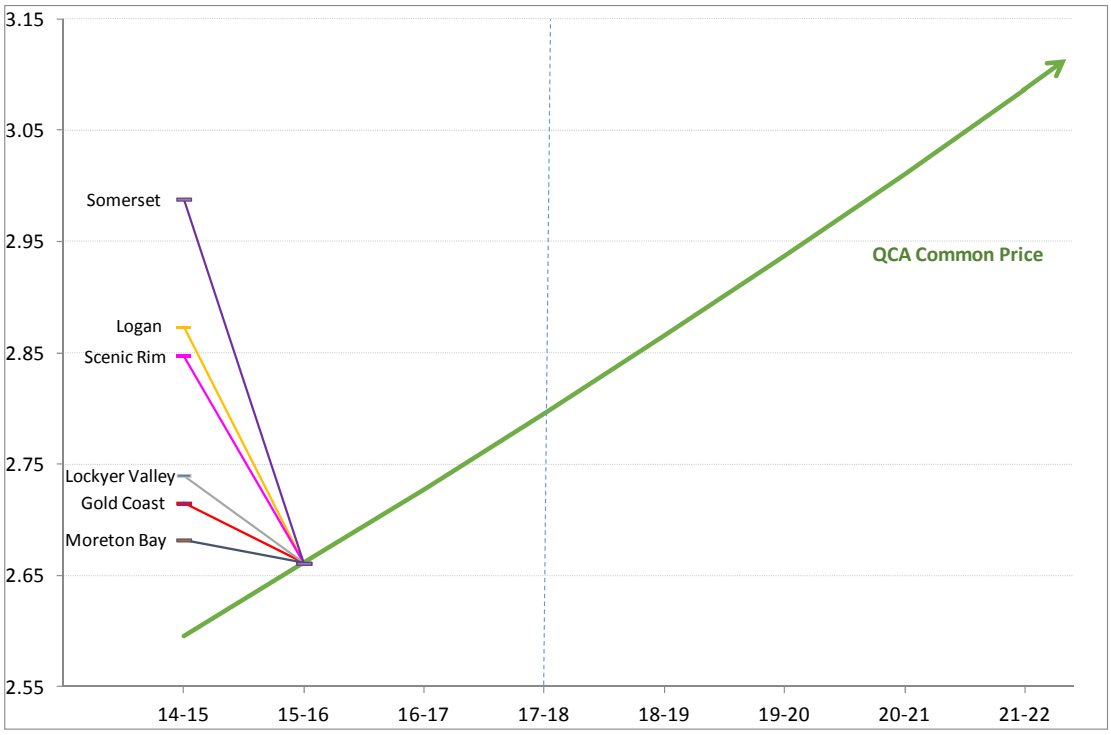
The QCA has considered the following principles relevant to choosing between these options:

- price expectations — a price reduction over successive periods may lead to the expectation that this reduction will continue into the future. This is unrealistic given that price increases are needed to recover debt by 2027-28. On this principle option (1) is preferred
- perception of cross-subsidy — high prices in some council areas benefit all council areas through lower price path debt and therefore a lower common price. A sustained disparity between areas that are above the common price and below the common price could be perceived as a cross-subsidy. On this principle option (1) is preferred.

Logan City Council (2014) submitted that it has paid a significantly higher bulk water price than most other council areas during the price path and that it is appropriate that bulk water charges be adjusted to reduce the impact on Logan customers.

To ensure that customers have appropriate expectations about future prices, and to avoid the perception of cross-subsidy, the QCA recommends that prices for Somerset, Logan, Scenic Rim, Lockyer Valley, Gold Coast and Moreton Bay fall to the common price immediately, in 2015-16.

Figure 11 Somerset, Logan, Scenic Rim, Lockyer Valley, Gold Coast and Moreton Bay draft recommended price path ($/kL)



Source: QCA calculations

In summary, the QCA recommends that prices in 2015-16 fall for Somerset (11.7%), Logan (8.2%), Scenic Rim (7.3%), Lockyer Valley (3.7%), Gold Coast (2.8%), Moreton Bay (1.6%) and increase thereafter by CPI.

Draft recommendation

7.3 Bulk water prices in 2015-16 fall for Somerset (11.7%), Logan (8.2%), Scenic Rim (7.3%), Lockyer Valley (3.7%), Gold Coast (2.8%), Moreton Bay (1.6%) (and increase thereafter by CPI).

7.3.5 Price path for Redland, Sunshine Coast and Noosa

The indicative prices include a relatively large rise in 2017-18 for these three councils for them to 'catch up' to the common price. For Redland, this would amount to a 31% price increase in 2017-18.

In contrast, the Referral requires the QCA to recommend the price path and impact on bulk water debt of extending the price path arrangements for Redland, Sunshine Coast and Noosa by two years.

The Brisbane City Council (BCC) (2014) submitted that the QCA should identify any cross-subsidisation in extending the existing price path to Sunshine Coast, Redland and Noosa.

The QCA notes that the Referral requires all council areas in SEQ to eventually pay the same price. In light of this government policy, the QCA has not required Seqwater to distinguish costs by council area. To do so would impose additional costs on Seqwater, and ultimately water users, without having any meaningful bearing on recommended prices. In the absence of costs by council area, the QCA cannot identify cross-subsidy.

MBRC (2014) submitted that the price path for these three council areas should not be extended for a further two years, as this would continue the inequity of bulk water prices.

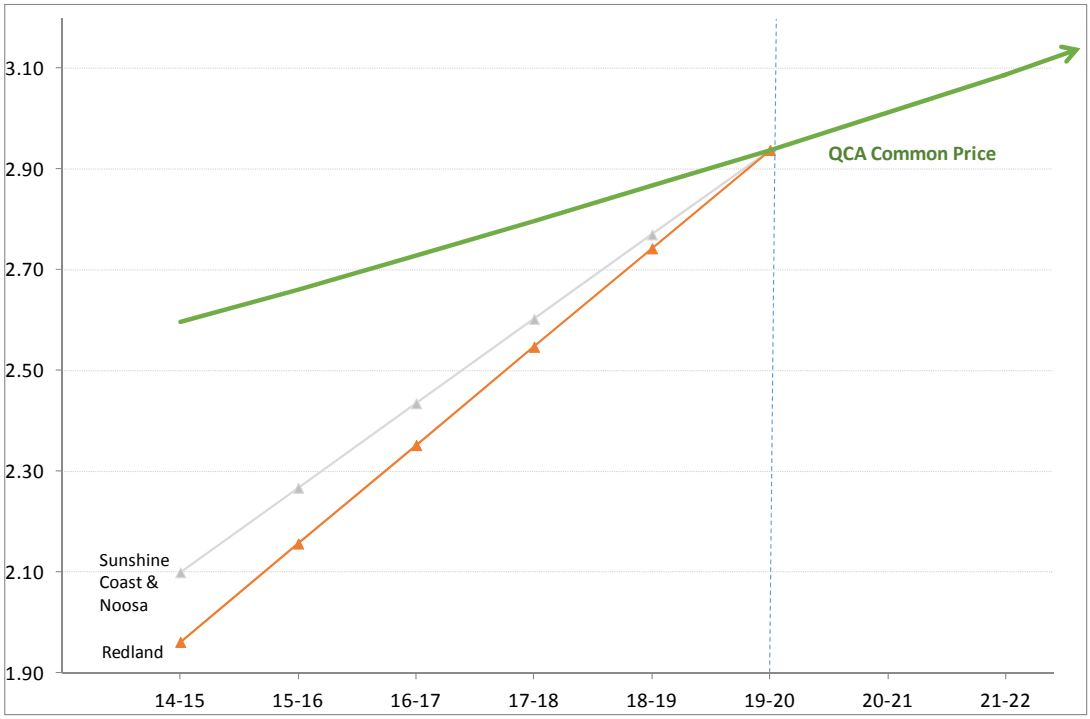
The QCA notes that the Referral requires it to recommend the price path and impact on bulk water debt of extending the price path for these three council areas.

Redland City Council (2014) submitted that if the QCA smoothed the 31% increase in [indicative] prices in 2017-18, it would impact on the current pricing strategy adopted by Redland City Council and allow it to take a more sedate pricing in coming years.

The QCA's recommendations reflect the requirement of the Referral. However, the QCA's recommended prices have a smoother profile compared to the indicative price path, particularly for Redland. Under the QCA's price path, the maximum increase in Redland is 10%, rather than 31%.

Specifically, the QCA notes that extending the prices for Redland, Sunshine Coast and Noosa limits annual price rises. For these councils to reach the common price in 2017-18, prices would have to rise by up to $0.62/kL (compared to the $0.19/kL recommended on the basis of the extension), materially more than in Brisbane and Ipswich ($0.10/kL).

Figure 12 Sunshine Coast, Noosa and Redland draft recommended price path ($/kL)



Source: QCA calculations

In summary, the QCA recommends that prices increase for Redland (by an average of 8.3% per annum), Sunshine Coast (by an average of 6.8% per annum) and Noosa (by an average of 6.8% per annum) to the common price in 2019-20 and then by CPI.

Draft recommendation

7.4 The bulk water prices increase for Redland (by an average of 8.2% per annum), Sunshine Coast (by an average of 6.8% per annum) and Noosa (by an average of 6.8% per annum) to the common price in 2019-20 (and increase thereafter by CPI).

7.4 Draft recommended bulk water prices

The draft recommended prices for 2015-18 and in subsequent years (where 2017-18 prices are increased by inflation) are summarised in Table 2 below. The increases in prices are lower than the indicative prices announced by the government in 2013.

To illustrate the impact of prices changes on residential water bills, the QCA adopts a benchmark water use of 200kL/annum. This is the same as the approach adopted by the federal and Queensland governments and provides consistent basis for year-to-year comparisons. Actual water use varies over time and between council areas. The QCA notes that the 200kL/annum benchmark is above average household use in SEQ, which was 140kL/annum in 2013-14.

For Somerset, Logan, Scenic Rim, Lockyer Valley, Gold Coast and Moreton Bay, the draft recommendations mean that for a household using 200kL per annum, bulk water bills will fall by between $9 and $70 in 2015-16, followed by increases in line with inflation only. This compares to annual increases of between $15 and $49 over 2015-18 under the indicative price path.

The maximum increase in draft recommended prices over the 2015-18 period (in Redland) is $0.19/kL per annum, or $38 per annum for a household using 200kL per annum. In contrast, under the 2013 indicative prices, the annual Redland household bill for 200kL would have increased by $49 per annum until 2017-18, when it would have increased by $153.

On the whole, taking into account the forecast water use in different council areas, the weighted average draft price paid by water users in SEQ will increase by $0.07/kL per annum over the 2015-18 period. This equates to a 200kL bill increase of $13 per year.

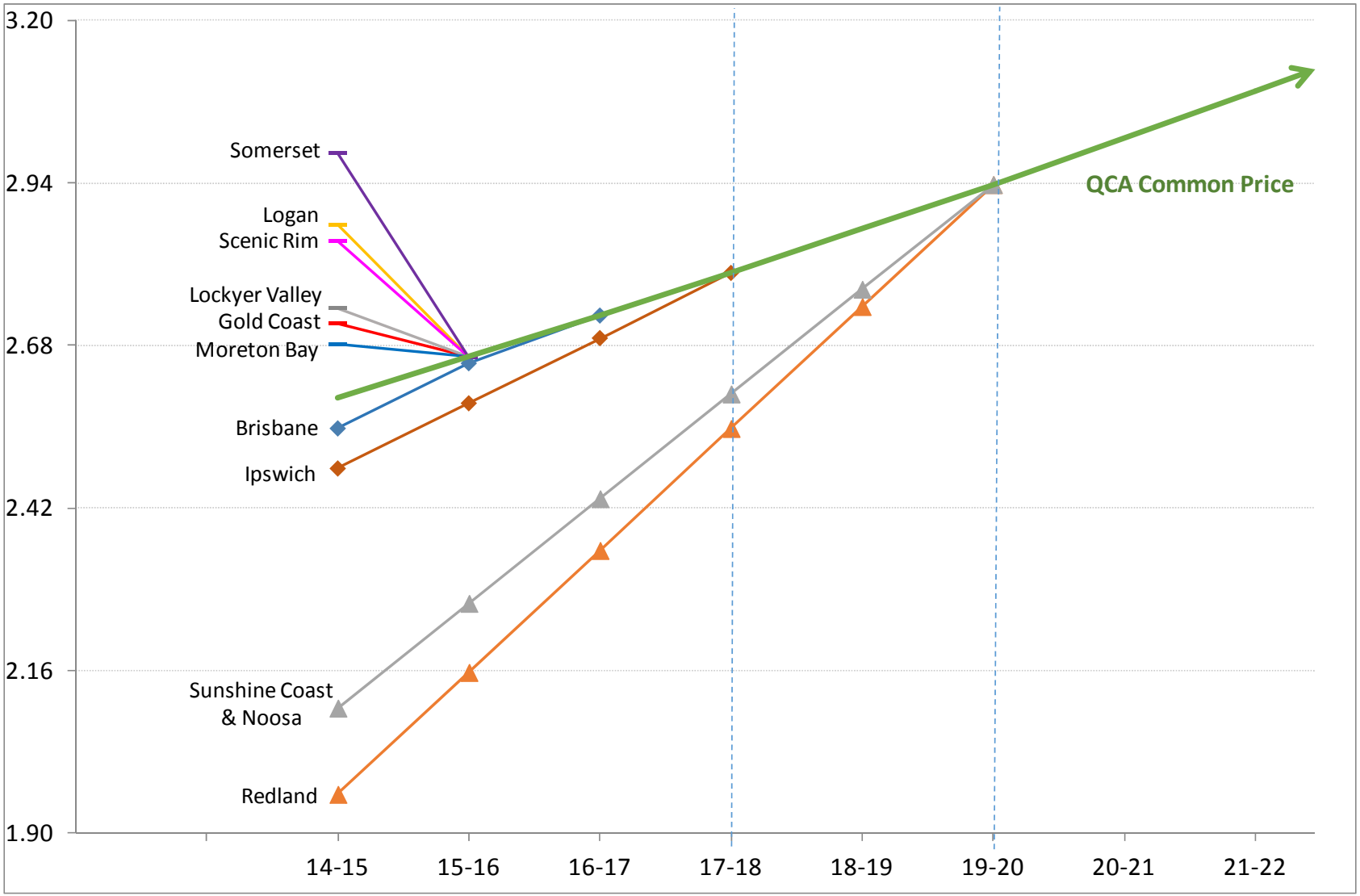
By comparison, the weighted average price paid by water users in SEQ would have increased by $45 per annum over 2015-18 under the 2013 indicative prices.

Table 66 Indicative and draft recommended prices ($/kL)

Council area	*Price*	*2015-16*	*2016-17*	*2017-18*	*2018-19*	*2019-20*	*2020-28*
Brisbane	Indicative price	2.79	3.04	3.22	3.30	3.38	+2.5% p.a
	QCA recommended	2.64	2.70	2.77	2.84	2.91	+2.5% p.a
	Difference	-5%	-11%	-14%	-14%	-14%	-14%
Gold Coast	Indicative price	2.96	3.14	3.22	3.30	3.38	+2.5% p.a
	QCA recommended	2.64	2.70	2.77	2.84	2.91	+2.5% p.a
	Difference	-11%	-14%	-14%	-14%	-14%	-14%
Ipswich	Indicative price	2.73	2.97	3.22	3.30	3.38	+2.5% p.a
	QCA recommended	2.58	2.68	2.77	2.84	2.91	+2.5% p.a
	Difference	-5%	-10%	-14%	-14%	-14%	-14%
Lockyer Valley	Indicative price	2.98	3.14	3.22	3.30	3.38	+2.5% p.a
	QCA recommended	2.64	2.70	2.77	2.84	2.91	+2.5% p.a
	Difference	-12%	-14%	-14%	-14%	-14%	-14%
Logan	Indicative price	3.06	3.14	3.22	3.30	3.38	+2.5% p.a
	QCA recommended	2.64	2.70	2.77	2.84	2.91	+2.5% p.a
	Difference	-14%	-14%	-14%	-14%	-14%	-14%
Moreton Bay	Indicative price	2.93	3.14	3.22	3.30	3.38	+2.5% p.a
	QCA recommended	2.64	2.70	2.77	2.84	2.91	+2.5% p.a
	Difference	-10%	-14%	-14%	-14%	-14%	-14%
Scenic Rim	Indicative price	3.06	3.14	3.22	3.30	3.38	+2.5% p.a
	QCA recommended	2.64	2.70	2.77	2.84	2.91	+2.5% p.a
	Difference	-14%	-14%	-14%	-14%	-14%	-14%
Somerset	Indicative price	3.06	3.14	3.22	3.30	3.38	+2.5% p.a
	QCA recommended	2.64	2.70	2.77	2.84	2.91	+2.5% p.a
	Difference	-14%	-14%	-14%	-14%	-14%	-14%
Redland	Indicative price	2.21	2.45	3.22	3.30	3.38	+2.5% p.a
	QCA recommended	2.15	2.34	2.53	2.72	2.91	+2.5% p.a
	Difference	-2%	-4%	-21%	-17%	-14%	-14%
Sunshine Coast	Indicative price	2.34	2.59	3.22	3.30	3.38	+2.5% p.a
	QCA recommended	2.26	2.43	2.59	2.75	2.91	+2.5% p.a
	Difference	-3%	-6%	-20%	-17%	-14%	-14%
Noosa	Indicative price	2.34	2.59	3.22	3.30	3.38	+2.5% p.a
	QCA recommended	2.26	2.43	2.59	2.75	2.91	+2.5% p.a
	Difference	-3%	-6%	-20%	-17%	-14%	-14%

Note: Rounded to nearest cent. Source: QCA calculations

Figure 13 Draft recommended bulk water price path ($/kL)



Source: QCA calculations

Table 67 Draft recommended change in bulk water bills ($ per annum)

Council area	*Price*	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-19*	*2019-20*
Brisbane	Indicative price	+49	+49	+49	+36	+16	+16
	QCA recommended	+49	+18	+13	+14	+14	+14
	Difference	–	-31	-36	-23	-2	-2
Gold Coast	Indicative price	+49	+49	+36	+16	+16	+16
	QCA recommended	+49	-15	+13	+14	+14	+14
	Difference	–	-64	-23	-2	-2	-2
Ipswich	Indicative price	+49	+49	+49	+49	+16	+16
	QCA recommended	+49	+19	+19	+19	+14	+14
	Difference	–	-30	-30	-30	-2	-2
Lockyer Valley	Indicative price	+49	+49	+31	+16	+16	+16
	QCA recommended	+49	-20	+13	+14	+14	+14
	Difference	–	-69	-18	-2	-2	-2
Logan	Indicative price	+49	+38	+15	+16	+16	+16
	QCA recommended	+49	-47	+13	+14	+14	+14
	Difference	–	-85	-2	-2	-2	-2
Moreton Bay	Indicative price	+49	+49	+42	+16	+16	+16
	QCA recommended	+49	-9	+13	+14	+14	+14
	Difference	–	-58	-29	-2	-2	-2
Scenic Rim	Indicative price	+49	+43	+15	+16	+16	+16
	QCA recommended	+49	-42	+13	+14	+14	+14
	Difference	–	-85	-2	-2	-2	-2
Somerset	Indicative price	+23	+15	+15	+16	+16	+16
	QCA recommended	+23	-70	+13	+14	+14	+14
	Difference	–	-85	-2	-2	-2	-2
Redland	Indicative price	+49	+49	+49	+153	+16	+16
	QCA recommended	+49	+38	+38	+38	+38	+38
	Difference	–	-11	-11	-115	+22	+22
Sunshine Coast	Indicative price	+49	+49	+49	+126	+16	+16
	QCA recommended	+49	+33	+33	+33	+33	+33
	Difference	–	-16	-16	-93	+16	+16
Noosa	Indicative price	+49	+49	+49	+126	+16	+16
	QCA recommended	+49	+33	+33	+33	+33	+33
	Difference	–	-16	-16	-93	+16	+16

Note: For a household that uses 200 kL per annum. Source: QCA calculations

7.5 Alternative price paths

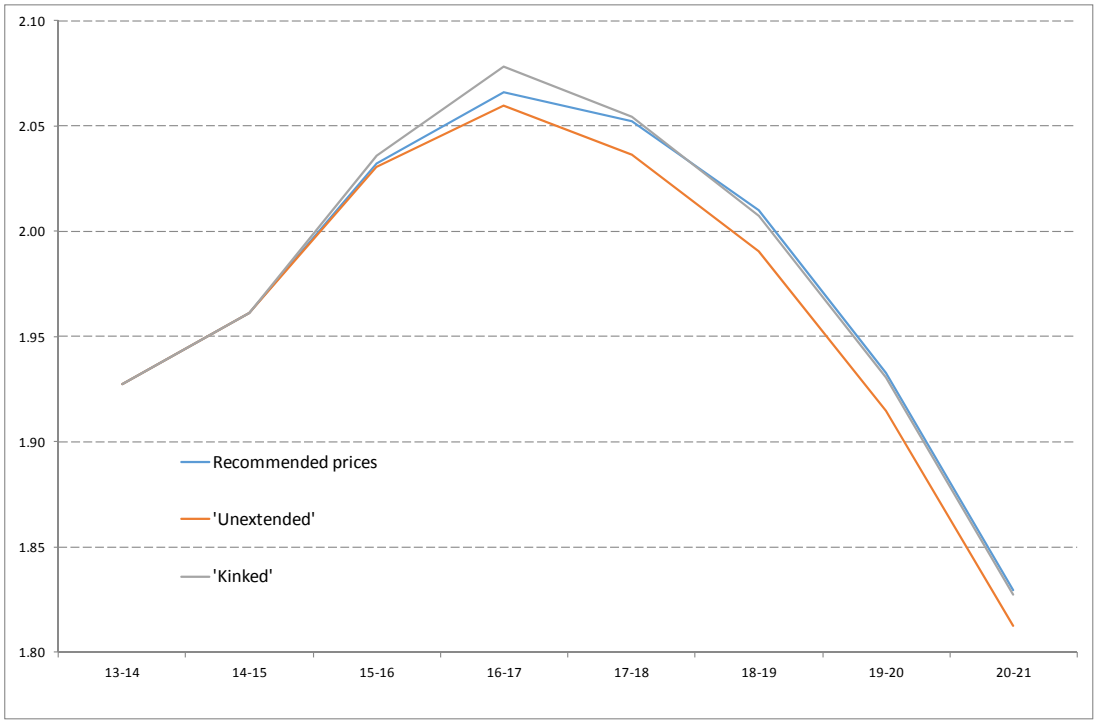
The Referral requires the QCA to recommend the price path and impact on bulk water debt of extending the price path by two years for Redland, Sunshine Coast and Noosa. As such, the QCA's draft recommended prices reflect the extension for these three council areas.

If there were to be no two-year extension for Redland, Sunshine Coast and Noosa, prices would need to increase more rapidly to reach the common price in 2017-18. Under this 'unextended' price path, the 2017-18 common price remains $2.77/kL and peak debt falls from $2,066 million to $2,060 million in 2016-17.

An alternative scenario would be to continue the pricing approach adopted by the government in 2013. This 'kinked' price path would not smooth price increases, but adopt a sharper, kinked increase to reach the common price in 2017-18. Under this scenario, the common price remains $2.77 and debt peaks at a slightly higher level of $2,078 million in 2016-17.

Relative to the QCA's recommended prices, either scenario only causes an immaterial difference in the repayment profile of price path debt or in the prices paid by council areas other than Redland, Sunshine Coast and Noosa.

Figure 14 Impact of alternative price paths on price path debt ($bn)



Note: Price path debt as at 30 June. Source: QCA calculations

Table 68 Alternative price paths ($/kL)

Council area	*Price path*	*2015-16*	*2016-17*	*2017-18*	*2018-19*	*2019-20*
Brisbane	QCA recommended	2.64	2.70	2.77	2.84	2.91
	'Unextended'	2.63	2.70	2.77	2.84	2.91
	'Kinked'	2.64	2.70	2.77	2.84	2.91
Gold Coast	QCA recommended	2.64	2.70	2.77	2.84	2.91
	'Unextended'	2.63	2.70	2.77	2.84	2.91
	'Kinked'	2.64	2.70	2.77	2.84	2.91
Ipswich	QCA recommended	2.58	2.68	2.77	2.84	2.91
	'Unextended'	2.58	2.67	2.77	2.84	2.91
	'Kinked'	2.58	2.68	2.77	2.84	2.91
Lockyer Valley	QCA recommended	2.64	2.70	2.77	2.84	2.91
	'Unextended'	2.63	2.70	2.77	2.84	2.91
	'Kinked'	2.64	2.70	2.77	2.84	2.91
Logan	QCA recommended	2.64	2.70	2.77	2.84	2.91
	'Unextended'	2.63	2.70	2.77	2.84	2.91
	'Kinked'	2.64	2.70	2.77	2.84	2.91
Moreton Bay	QCA recommended	2.64	2.70	2.77	2.84	2.91
	'Unextended'	2.63	2.70	2.77	2.84	2.91
	'Kinked'	2.64	2.70	2.77	2.84	2.91
Scenic Rim	QCA recommended	2.64	2.70	2.77	2.84	2.91
	'Unextended'	2.63	2.70	2.77	2.84	2.91
	'Kinked'	2.64	2.70	2.77	2.84	2.91
Somerset	QCA recommended	2.64	2.70	2.77	2.84	2.91
	'Unextended'	2.63	2.70	2.77	2.84	2.91
	'Kinked'	2.64	2.70	2.77	2.84	2.91
Redland	QCA recommended	2.15	2.34	2.53	2.72	2.91
	'Unextended'	2.23	2.50	2.77	2.84	2.91
	'Kinked'	2.06	2.15	2.77	2.84	2.91
Sunshine Coast	QCA recommended	2.26	2.43	2.59	2.75	2.91
	'Unextended'	2.32	2.54	2.77	2.84	2.91
	'Kinked'	2.20	2.29	2.77	2.84	2.91
Noosa	QCA recommended	2.26	2.43	2.59	2.75	2.91
	'Unextended'	2.32	2.54	2.77	2.84	2.91
	'Kinked'	2.20	2.29	2.77	2.84	2.91

Note: For a household that uses 200 kL per annum. Source: QCA calculations

8 FUTURE REVIEWS

8.1 Introduction

The Referral requires the QCA to recommend:

- mid-price path review triggers and other mechanisms to manage cost and volume risks outside the control of Seqwater in order to provide Seqwater with cost recovery certainty and
- an appropriate approach for reviews of expenditure for the period following 1 July 2015. This is to include rules and procedures for determining the price path debt and cost recovery position throughout the price path, providing Seqwater with cost recovery certainty.

8.2 Managing volume and cost risks

Risks not controllable by regulated entities are generally associated with unpredictable or unexpected changes over the regulatory period.

The mechanisms typically used to manage volume and cost risks outside the control of a regulated entity include:

- **End-of-regulatory-period revenue adjustments.** Such an ex post adjustment allows an entity to recover under-recovered costs outside its control in the next regulatory period.
- **Price review triggers.** Review triggers within a regulatory period prompt an unscheduled review. The trigger is generally initiated by reference to a provider's revenues or costs, arising from events which cause costs to diverge significantly from initial forecasts.
- **Cost pass-throughs.** Such mechanisms allow automatic adjustments to prices during a regulatory period resulting from a change in a discrete cost item.
- **Efficiency carry-over mechanisms (ECMs).** ECMs allow the regulated firm to retain efficiency savings for a reasonable period of time. The effectiveness of such a regime depends upon service standards being precisely defined and a detailed understanding of the nature of costs and the basis for any changes.

Volume risks are typically addressed by reference to their nature. Short-term volume risks are associated with existing infrastructure, while long-term volume risks relate to the augmentation of supply.

Cost risks relate to changes in the cost of inputs that were unexpected at the time of pricing—often caused by an unanticipated external event.

8.2.1 Allocating risks

The Referral requires the QCA to recommend mechanisms to manage cost and volume risks outside Seqwater's control.

The primary consideration of whether to allocate a risk to Seqwater or its customers is therefore the ability of the respective parties to control the particular type of risk. Often such risks are generic.

Drawing on the QCA's (2012a) review of GSCs for 2012-13, Seqwater (2014a) submitted a number of specific risks (termed 'Review Events') as being outside its control.

Both the generic risks and those specifically identified by Seqwater have been considered by the QCA.

In considering the impact of such risks the QCA has taken into account the relevant regulatory objectives – such as economic efficiency, incentives for performance, revenue adequacy and the public interest.

8.2.2 Short-term volume risk

Volume risks (demand and supply) in a short-term context are associated with existing infrastructure assets.

Demand risk

Demand risk occurs when customer demand for water is variable and uncertain. This can result in variations between actual and forecast revenues and can affect costs.

Impact on revenue

Seqwater (2014a) submitted that demand is volatile, difficult to forecast with certainty and that there remains significant uncertainty as to the extent and timing of 'bounce-back' in demand following the Millennium drought and related water restrictions.

Seqwater submitted that it has no control over the demand for bulk water from SEQ water retailers or their customers.

Under the QCA's irrigation review, irrigators in SEQ bore demand risk as irrigation volumetric charges recovered all (and only) variable costs. The fixed irrigation charge reflected the balance of revenues required to maintain Seqwater's revenue requirement (QCA 2013).

Seqwater noted that it was previously largely insulated from demand risk under the GSCs. Seqwater's prices for urban water services are now 100% volumetric.

Seqwater therefore proposed that price path debt reflect actual revenue—in effect, passing demand risk to customers.

The QCA accepts that Seqwater has no effective ability to manage revenues in response to short-term demand risks. Prices are volumetric and unable to be varied by Seqwater of its own accord over the regulatory period. A change in revenue due to an unexpected change in demand should therefore be eligible for a mid-price path review.

However, to minimise regulatory costs, mid-price path reviews should only be undertaken where there are potentially material implications for Seqwater. Materiality and the rules and procedures for recouping revenues and costs are addressed below.

Any change to revenues that is not subject to a mid-price path review should be recouped by an end-of-period adjustment. This should take account of Seqwater's actual revenues, not forecast revenues.

Impact on costs

Seqwater (2014a) submitted that higher (lower) demand would trigger higher (lower) operating aggregate costs.

The need to trigger a review and the extent of compensation for this short-term demand risk therefore must take into account the extent to which price path debt is affected by any change in costs. The greater the proportion of Seqwater's costs that are fixed, the greater the impact a change in demand will have on Seqwater's cost recovery position and its ability to service price path debt (as charges are volumetric).

Further, it is noted that Seqwater's operating cost forecasts are based on:

- an assumed utilisation profile from its WTPs
- a static asset mix (excepting closure of some minor standalone WTPs).

Seqwater (2014a) also noted that the actual location of demand may require higher-cost supply sources to be deployed to a greater extent than assumed in its forecast.

The QCA accepts that changes in aggregate demand may also require a change in the asset mix. For example, Seqwater has assumed that supply from the WCRWS and the GCDP shall be maximised, subject to operational constraints, when combined storages fall to 40%. The estimated probability of the key bulk water storages falling to 40% in the next 10 years is assessed as around 1% (Seqwater 2014a). In these circumstances, Seqwater has little control over the response as it is determined by government.

Seqwater submitted that changes in demand that affect variable cost should be classified as a 'Review Event', similar to the approach adopted for 2012-13 GSCs. However, Seqwater also argued that it should have incentives to optimise the deployment of WTPs.

With respect to other jurisdictions:

- the Essential Services Commission (ESC) (2013) allowed cost pass-through for desalination water order and security costs for Melbourne Water and the metropolitan retailers
- Essential Services Commission of South Australia (ESCOSA) (2013) did not allow a cost pass-through for changes in the operating mode of the Adelaide Desalination Plant (ADP). ESCOSA stated that efficiently managing the supply mix of water sources is integral to the business of SA Water.
- ESCOSA also stated that various factors that could require a re-commissioning of the ADP - including a water quality incident or a failure in vital water supply infrastructure - would likely form an 'extraordinary event' and therefore be covered by other pass-through arrangements.

During the 2012-13 GSCs review, the QCA allowed Seqwater to recover cost changes caused by a change in water source. This was because the source of water was established by the SEQ Water Grid Manager and therefore outside of Seqwater's control (QCA 2012a).

The institutional framework has changed such that there is no longer external involvement by the SEQ Water Grid Manager in operational decisions regarding Seqwater's assets. Seqwater is now solely responsible for the utilisation and deployment of assets.

As noted, there are some circumstances where Seqwater will have no control because of government policy.

To the extent that Seqwater can control costs associated with changes in the utilisation and deployment of assets (consequent upon changes in either aggregate demand or its location) Seqwater should not be compensated for any losses. Moreover, there may be a case for Seqwater to retain the benefits of cost reductions due to costs being lower than expected as a result of improved asset utilisation and deployment. Such an approach would be consistent with Seqwater's submission that it should have incentives to optimise its asset deployment.

When seeking to trigger a mid-price path review, Seqwater would need to demonstrate that the particular circumstances or events are beyond its control.

Therefore the ability of Seqwater to vary the utilisation or deployment of assets should be a key determinant of whether a mid-price path review should be triggered and the compensation

provided. This would also be a consideration for the QCA when considering end-of-period adjustments.

Materiality thresholds and the rules or procedures for a mid-price path review are addressed below.

Supply risk

Supply risk arises wherever water availability is uncertain. Seqwater's ability to supply water in the short term depends on the availability of water in its storages and the capacity of its manufactured water sources.

The regulatory framework in SEQ makes provision for water restrictions when water availability declines. Seqwater considered it should not bear the risk of reductions to sales that accord with the acceptable severity, duration and length of water restrictions contemplated under the LOS objectives. It should only bear the risk associated with reductions to supply which result from a failure to meet these standards, if it can reasonably manage the supply shortage.

During the 2012-13 GSCs review, supply risk was not relevant due to the one-year review period during which dams levels were in excess of 90%.

In the Seqwater irrigation review, the QCA recommended that supply risk be borne by irrigators (QCA 2013). By recovering fixed costs from irrigators according to their holdings of water entitlements, Seqwater was able to recover its fixed costs regardless of whether there was water available for supply to irrigators.

The QCA recognises that typical responses to supply risk, such as asset augmentation or leak mitigation are not available to Seqwater in the short term. The QCA therefore accepts that SEQ water retailers and their customers should bear supply risk unless Seqwater has failed to meet the LOS objectives relating to the acceptable severity, duration and length of water restrictions – and only if Seqwater can reasonably manage the supply shortage.

An unexpected change in revenue or prudent and efficient costs, due to a change in water availability, with material implications for Seqwater, should be eligible for a mid-price path review. Any changes that are not subject to a mid-price path review should be recouped by an end-of-period adjustment.

Materiality thresholds and the rules and procedures for a mid-price path review are addressed below.

8.2.3 Long-term volume risk

Long-term volume risk relates to planning and modifying infrastructure in response to changes in the demand–supply balance. If a service provider underestimates long-term water demand, it may not have the infrastructure capacity to meet future demand. Conversely, where future demand is overestimated, the service provider may be left with substantial excess capacity.

Seqwater submitted it should recover actual capital expenditure. Seqwater proposed that, as part of a future bulk water price review, the RAB, and the capital costs attributable to price path debt, should be 'trued-up' to reflect actual efficient capital costs over the 2015-18 period.

Seqwater concluded this approach would align actual efficient costs with prices, avoid windfall gains or losses, and achieve consistency with the requirement to provide it with cost recovery certainty.

During the 2012-13 GSCs review, the QCA allowed Seqwater to recover actual capital expenditure (QCA 2012a). However, the prudency and efficiency of actual capital expenditure was to be assessed on an ex post basis.

During the Seqwater irrigation review, the QCA considered that the augmentation of bulk infrastructure is a responsibility of the Queensland Government and that Seqwater should not bear long-term volume risk (QCA 2013).

The QCA is required to accept Seqwater's demand forecasts providing it includes a long-term demand forecast of 185 l/p/d and a non-residential demand of 91 l/p/d (not including demand from power stations and Toowoomba Regional Council). Essentially, Seqwater is required to plan on this basis.

The QCA therefore accepts that customers as the beneficiaries should bear long-term supply risk where Seqwater has responded in a prudent and efficient manner to pre-specified demand.

Any shortfall in revenues associated with prudent and efficient capital expenditure for augmentation undertaken by Seqwater - in a manner consistent with the government-determined demand forecast should be eligible for a mid-price path review, where it has material implications for Seqwater. Where not recovered in a mid-price path review it should be considered at an end-of-period review. Materiality thresholds and the rules and procedures for a mid-price path review are addressed below.

Draft recommendation

8.1 Where Seqwater can demonstrate that it is unable to manage the impact of unexpected changes to water demand or supply which causes a change in revenue or prudent and efficient costs:

(a) a material change be eligible for a mid-price path review

(b) where not subject to a mid-price path review, the change be recouped by an end-of-period adjustment.

8.2.4 Cost risks

Cost risks arise from unpredicted changes in the price or volume of inputs required to supply water. If actual costs increase unexpectedly after prices are set, the service provider is likely to receive inadequate revenue. The risk can also arise as a result of poor management practices that allow costs to increase beyond efficient levels.

It can be difficult to establish the source of changes in costs and whether these are controllable or not. Furthermore, a reduction in costs may be the result of a decrease in service rather than an increase in efficiency.

Capital expenditure

In relation to capital expenditure cost risk, Seqwater submitted that the approach adopted for the GSCs be continued. That is, an ex-post review of actual capital expenditure is undertaken to ensure that it recovers only prudent and efficient capital expenditure. Seqwater did not suggest a mid-price path review trigger for capital expenditure.

Changes to the costs of capex items will take time to affect prices. The QCA therefore accepts Seqwater's proposal. Any changes to capex should be addressed during an end-of period review, and subject to an assessment of prudency and efficiency.

Operating costs

Seqwater (2014a) proposed that it is reasonable for it to bear operating cost risk within a pricing period with no 'true up' to actual operating costs except for specific review events. Seqwater noted that this approach is consistent with standard regulatory practice and provides Seqwater with the incentives to increase productivity and efficiency of operations within a regulatory period.

The level of control Seqwater has over forecast costs varies by type of cost. For example, Seqwater may be able to choose between employees and contractors, or between labour and automation, for certain water supply functions. Seqwater has limited control over electricity costs, but can negotiate electricity contracts with competing suppliers.

During the 2012-13 GSCs review, the QCA did not allow Seqwater to recover changes in fixed operating costs (QCA 2012a). The review of Seqwater's irrigation prices recommended a variety of mechanisms to manage risks due to market conditions for inputs (QCA 2013).

Seqwater's proposal for it to bear operating cost risk (other than for certain events) would also allow Seqwater to retain any savings it makes through lower than forecast costs and would thus provide incentives for improved performance.

Draft recommendation

8.2 Any unexpected changes to capex be addressed during an end-of period review, and be subject to an assessment of prudency and efficiency.

8.3 Seqwater bear operating cost risks other than those related to Review Events.

8.2.5 Review Events

Seqwater submitted a number of events that should trigger a mid-price path review which may impact its cost recovery position.

Emergency events

Seqwater (2014a) noted that for the 2012-13 GSCs, the QCA (2012a) defined emergency events to include costs arising from events such as floods, which can trigger the activation of emergency response plans, staff overtime and rectification costs.

Seqwater has interpreted rectification costs as inclusive of the cost of repairs to flood damage, less any insurance proceeds. There is no provision for these costs in the operating or capital cost forecasts in Seqwater's submission.

Costs associated with legal action being pursued by some SEQ residents in response to the effects of the January 2011 flood (refer to Seqwater 2014g) may also impact on Seqwater's operating expenditure.

During the 2012-13 GSCs review, Seqwater was allowed to recover all prudent and efficient costs incurred in response to the emergency event where it was not at fault (QCA 2012a).

To provide Seqwater with cost recovery certainty, the QCA recommends that, where Seqwater is not at fault for an emergency event, a change in revenue or prudent and efficient costs due to an emergency event should be eligible for a mid-price path review, where it has material implications for Seqwater. Where not material, it should be passed through by an end-of-period adjustment. Materiality thresholds and the rules and procedures for a mid-price path review are addressed below.

Draft recommendation

8.4 Where Seqwater can demonstrate that it is not at fault for an emergency event which causes a change in revenue, or prudent and efficient costs:

(a) a material change be eligible for a mid-price path review

(b) where not subject to a mid-price path review, the change be recouped by an end-of-period adjustment.

Law or government policy events

Seqwater (2014a) submitted that changes in law and government policy, as defined by the QCA (2012a) for the 2012-13 GSCs review, remain a review event.

Seqwater submitted that any government-initiated balance-sheet transactions, such as a sale of assets, would likely result in a substantial change to costs and should trigger a review event. The possible construction of eight new dams or raising Wivenhoe Dam as part of the government's draft Flood Plan (DEWS 2014d), were also identified by Seqwater as examples of changes in law or government policy outside its control.

Further, Seqwater submitted that revenues from other bulk water sales (e.g. to power stations) be applied as an offset to bulk water costs. The prices for these sales are set by the government rather than Seqwater. Any related change would affect Seqwater's cost recovery position.

The QCA agrees that changes in law or government policy are beyond the control of Seqwater. In a competitive market, the prudent and efficient costs arising from changes in law or government policy would be passed through to customers (QCA 2012b).

During the 2012-13 GSCs review, Seqwater was allowed to recover all prudent and efficient costs incurred in response to a change in law or government policy (QCA 2012a). The review of Seqwater's irrigation prices also allowed Seqwater to recover costs caused by government or regulatory imposts (QCA 2013).

To provide Seqwater with cost recovery certainty the QCA recommends that customers bear the risk of changes in law or government policy. Where the impact of a law or government policy change on bulk water prices is unambiguous, it is recommended that the change be automatically passed through by Seqwater to customers—that is, without review by the QCA, but subject to government approval.

Where Seqwater's ability to manage the material impact of a change in government policy is less clear, Seqwater should demonstrate that it is unable to manage this risk to be eligible for a mid-price path review. Any changes that are not subject to a mid-period review should be recouped by an end-of–period adjustment. The key issue in each instance will be the prudency and efficiency of the associated costs.

Materiality thresholds and the rules and procedures for a mid-price path review are addressed below.

Draft recommendation

8.5 Where the impact of law or government policy on bulk water prices is unambiguous, it be automatically passed through by Seqwater to customers.

8.6 Where Seqwater can demonstrate that it is unable to manage the impact of law or government policy on bulk water prices which causes a change in revenue, or prudent and efficient costs:

- **(a) a material change be eligible for a mid-price path review**
- **(b) where not subject to a mid-price path review, the change be recouped by an end-of-period adjustment.**

Feedwater quality events

Seqwater (2014a) submitted that feedwater quality events negatively affect the quality of raw water taken for treatment at a WTP, thereby increasing treatment cost. Seqwater's operating cost forecasts do not provide any contingency or allowance for these costs.

Compared to water businesses in Sydney and Melbourne, Seqwater submitted that it has less control over its catchments. Melbourne Water owns most of the catchment land for its storages and Sydney Catchment Authority has statutory powers for land use within dam catchments (Seqwater 2011).

Seqwater does manage catchments around its storages to varied extents but accepts that it cannot influence other contributing factors to feedwater quality such as weather, land use and topography.

Drawing on the QCA's (2012a) review of GSCs for 2012-13, Seqwater noted that the QCA concluded that, to the extent the cost impact is outside Seqwater's control and that Seqwater's response is prudent and efficient, Seqwater should fully recover the costs. Seqwater submitted that this position should continue for the 2015-18 period.

Since the GSCs review, Seqwater has assumed control over network operation and treatment of assets deployment. Seqwater's ability to alter the operation of the treated water network in response to feedwater quality events has been somewhat enhanced.

Further, Seqwater is actively managing this risk, as exemplified by the proposed filter upgrade project at Mt Crosby WTP.

To the extent that this risk can be managed, the QCA does not propose to make such risks generally eligible for mid-price path review or an end-of-period adjustment. However, should Seqwater be able to demonstrate in a particular instance that the risk and associated revenue and cost implications were not manageable the QCA recommends that material changes be eligible for mid-price path review and for an end-of-period adjustment (if not subject to a mid-price path review).

Draft recommendation

8.7 Where Seqwater can demonstrate that it is unable to manage the impact of feedwater quality which causes a change in revenue, or prudent and efficient costs:

(a) a material change be eligible for a mid-price path review

(b) where not subject to a mid-price path review, the change be recouped by an end-of-period adjustment.

Cost of debt events

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

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

Seqwater (2014a) does not consider it should be exposed to the risk of differences between its actual and forecast cost of debt, which is largely driven by changes in market interest rates and is beyond its control.

The QCA's standard rate of return is a forward-looking weighted average cost of capital, which would not be retrospectively adjusted for the actual cost of debt. However, the Referral requires that the rate of return to be used for prices be the long-term cost of debt as advised by the QTC. For the 2015-28 period, the QCA has adopted the QTC's forecast cost of debt of 6.25%.

If the QTC advises a revision in the cost of debt, the QCA considers it is bound to allow Seqwater to recover the revised cost of debt. At the time of the next review, it is a matter for the government whether the QTC should be approached to advise the actual cost of debt.

Any QTC advice of a change to Seqwater's cost of debt, with material implications for Seqwater, should be eligible for a mid-price path review. Any cost of debt changes that are not subject to a mid-price path review should be recouped by an end-of-period adjustment.

Materiality and the rules or procedures for recouping costs are addressed below.

Draft recommendation

8.8 Seqwater recover the cost of debt advised by QTC.

8.3 Mid-price path reviews

8.3.1 Materiality

A key issue in providing Seqwater with cost recovery certainty is the threshold at which a mid-price path review is triggered.

To minimise regulatory costs, the QCA considers that a mid-price path review should only be triggered where revenues or costs change with material implications for Seqwater.

For example, the QCA notes that for Sydney Water Corporation, Hunter Water Corporation and Gosford and Wyong councils, IPART (2012, 2013a, 2013b) decided to apply a demand volatility adjustment only where the level of over- or under-recovery exceeds a 10% dead-band level.

In the 2012-13 GSCs review, the QCA considered that a mid-price path review should only be triggered if a review event had a detrimental effect on the Seqwater and LinkWater cost

recovery positions, as measured by available cash flows. On the basis of its cash flow modelling, the QCA recommended a review threshold of 5% of Maximum Allowable Revenue (MAR) (QCA 2012b). The tariff structure of the GSCs protected Seqwater from demand risk, meaning that a review threshold for revenues was not necessary.

Broadly in line with the GSCs approach, Seqwater submitted the following materiality thresholds:

- for costs, 5% of the average MAR over 2015-18
- for revenues, a reduction in actual and expected demand versus forecast demand of more than 5% per annum over 2015-18.

Having regard to the importance of repaying price path by 2027-28, variations to price path debt would seem a more appropriate reference for triggering a review. Compared to Seqwater's proposed thresholds, price path debt has the advantages that:

- it is comprehensive, reflecting changes to costs, demand and revenues
- it can account for a combination of offsetting changes, such as lower-than-expected revenue and costs
- it is a primary focus of government.

The quantum of the materiality threshold is affected by considerations of an entity's capacity to absorb (as well as manage) the financial implications of volume and cost risks.

In general, we recognise that Seqwater has limited opportunity to respond operationally to volume and cost risks.

The QCA notes that Seqwater's capacity to absorb such risks is less than when GSCs were being considered.

Seqwater previously received a return on equity for non-drought assets. Now it receives no return on equity. Previously GSCs were reset annually. Now they are set for the regulatory period and Seqwater has no capacity of its own volition to vary prices (either their structure or level).

Seqwater has limited capacity to carry revenue shortfalls or cost overruns from operating revenues.

In the event of an under-recovery in revenues or cost overrun, Seqwater must therefore seek to have prices reviewed (each time a relatively small risk event occurs), reduce accumulated reserves, access its redraw facilities with the QTC, or seek government approval to increase debt, or to fund cash flow shortfalls through budget supplementation.

The appropriateness of these responses is a matter for government. The QCA therefore recommends that the need for a mid-price path review be determined by government.

The QCA notes that a certain quantum of under-recovery of revenues or cost over-runs could result in debt not being repaid, but rather increasing over time, under recommended prices. For example, a permanent decrease in demand of 20%, starting in 2014-15, could result in such an outcome. This can also be expected to be relevant when considering whether a mid-price path review should be triggered.

Draft recommendation

8.9 The need for a mid-price path review be determined by the government.

8.4 Approach for reviews of expenditure

8.4.1 Rules and procedures

The Referral requires the QCA to recommend rules and procedures for determining the price path debt and cost recovery position throughout the price path.

Responsibility for determining cost recovery position

Seqwater has ready access to the necessary cost and demand data and the responsibility to monitor its financial performance.

The QCA's price modelling has been undertaken in collaboration with Seqwater. The QCA price model therefore serves as a useful tool for both organisations to track the estimate of 2027-28 price path debt, and thereby determine Seqwater's cost recovery position.

As a result, Seqwater is best placed to monitor its cost recovery position. The QCA recommends that Seqwater be responsible for monitoring and reporting to the government its cost recovery position throughout the price path.

Rules for determining cost recovery position

The QCA's price model achieves price path debt of $0 at the end of 2027-28 on the basis of forecast demand and prudent and efficient costs over the 2013-28 period.

Changes in price path debt will be underpinned by changes in actual demand and cost which can be expected to vary from forecast. Seqwater will be best placed to record and report on actual cost and revenue outcomes.

Seqwater should therefore periodically update forecast cost and demand with actual information and improved forecasts.

The QCA considers it appropriate that Seqwater should provide quarterly updates using existing reporting processes. This information should be provided to the relevant agencies, QTT and DEWS.

Seqwater's updates should include, at minimum, actual bulk water revenue and expected 2027-28 price path debt.

Applying for a mid-price path review

Seqwater may, at any time, apply for a mid-period review. In doing so, Seqwater will need to demonstrate that it is unable to manage the revenue or prudent and efficient cost implications of a particular risk or event. Seqwater will also need to demonstrate that repayment of price path debt by 2027-28 is unachievable without an amendment to recommended prices.

Seqwater's application for a mid-price path should contain all relevant information including:

- its estimate of 2027-28 price path debt
- the largest contributing factors to changes in its cost recovery position
- the updated copy of the QCA pricing model it used to estimate 2027-28 price path debt.

The government should be allowed to request any further information to substantiate that the changes to Seqwater's cost recovery position are prudent and efficient.

Draft recommendations

8.10 Seqwater report the actual price path debt and cost recovery position on a quarterly basis to QTT and DEWS.

8.11 Seqwater may apply to the government for a mid-price path review if changes in revenues and costs impact on estimated 2020-21 prices.

8.4.2 Scheduled future reviews

The Referral requires the QCA to recommend an approach for reviews of expenditure following 1 July 2015. This may take the form of a mid-price path review, as described above, or a scheduled review.

The need for a scheduled review

Seqwater (2014a) has:

- stated there was a need to periodically review the price path to ensure cost recovery while minimising price shocks to consumers
- acknowledged that the regulatory framework beyond 2017-18 is yet to be determined by the government
- indicated it expects that the intent, post 2017-18, is to re-set the common price periodically to ensure recovery of bulk water costs over the remaining period to 2027-28.

The QCA notes that:

- Seqwater's policies and planning processes are still maturing following the merger with LinkWater and the SEQ Water Grid Manager
- Seqwater is due to provide a WSP to government in July 2015, which is likely to have implications for capital and operating costs
- the rebound of water demand from drought levels is expected to be coming to an end (QCA 2014b).

Seqwater's estimates of costs and revenues should mature in coming years, with implications for its cost recovery position. This suggests that another review should be scheduled to reset prices after 2017-18.

Timing of review

Seqwater submitted that:

- the price path be reviewed in 2017-18 to establish a revised common price from 2018-19
- a five-year period from 2018-19 to 2022-23 should be the maximum pricing period, and that the precise period should be determined closer to 2017-18 when there is more information about cost certainty and demand to make this decision.

The QCA accepts Seqwater's submission of a review in 2017-18. Three years between reviews will allow Seqwater to mature its policies, procedures and water security planning. The rebound of water demand from drought levels should also be complete by 2017-18.

A lengthier regulatory period—that is, five years—would reduce regulatory costs with greater price certainty.

A lighter-handed approach could subsequently be considered as it would further lower regulatory costs.

A review completion date of 30 April 2018 would allow SEQ water retailers to account for the impact of any change to bulk water prices in setting 2018-19 retail water prices.

The QCA therefore recommends the following due dates:

- submission by Seqwater to QCA — 30 September 2017
- draft report by the QCA — 30 January 2018
- submissions on the draft report — 31 March 2018
- final report by the QCA — 30 April 2018.

Scope of the next review

While the scope of future reviews is a matter for the government, there may be merit in considering the following matters:

- whether escalating prices by inflation only is appropriate to cover Seqwater's prudent and efficient costs and to repay price path debt
- the largely fixed cost nature of Seqwater's costs, whether prices should be 100% volumetric. The QCA notes Unitywater's submission that reliance on a fully variable price will encourage the development of inefficient water supply options that are only viable because of the customer's ability to avoid the very high variable water charge (Unitywater 2014)
- whether demand forecasts specified in the Referral are appropriate
- Seqwater's submission that the cost-of-debt rate of return be reconsidered (Seqwater 2014a)
- whether the current purchasing arrangements between Seqwater, water retailers and customers are appropriate.

End-of-period adjustments

As noted above, to minimise regulatory costs, the QCA recommends that mid-price path reviews should only occur if they have a material impact on Seqwater's customers. The QCA therefore accepts that end-of-period reviews are suitable for managing demand and cost risks which do not adversely affect an entity's financial viability or its customers in a material manner during the regulatory period.

A zero materiality threshold, as requested by Seqwater, is considered appropriate for this purpose. An end-of-period review is most easily conducted as part of the next scheduled review.

The end-of-period review should only reconcile actual costs and revenues that correspond with risks that are borne by customers. Seqwater should not recover actual costs that relate to risks it has been allocated. Furthermore, Seqwater's actual costs should be subject to a prudency and efficiency review before they are allowed to be recovered.

Seqwater (2014a) submitted that price path debt should operate as a true-up mechanism to ensure that efficient costs are recovered to 2027-28.

The QCA agrees. Adjusting the opening price path debt at the next scheduled review allows Seqwater to recover prudent and efficient costs without requiring frequent updates to the price path.

Draft recommendations

8.12 A future review of Seqwater's expenditures be completed by 30 April 2018.

8.13 The government consider whether the scope of future reviews should broaden to include matters such as tariff structure, rate of return and demand forecasts.

8.14 The next scheduled review include an end-of-period adjustment for prudent and efficient costs and actual revenues.

8.15 The end-of-period review only reconcile costs and revenues that correspond to risks borne by customers.

GLOSSARY

#	
2013-28	The period from 1 July 2013 to 30 June 2028. Costs incurred during this period affect bulk water prices in 2015-18.
2015-18	The period from 1 July 2015 to 30 June 2018. The QCA must recommend prices for this period.
2018-28	The period from 1 July 2018 to 30 June 2028. Used in tables for summary purposes.
2020-28	The period from 1 July 2020 to 30 June 2028. Used in tables for summary purposes.
A	
ABS	Australian Bureau of Statistics
ACIF	Australian Construction Industry Forum
ADP	Adelaide Desalination Plant
ADWG	Australian Drinking Water Guidelines
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AFC	Acceptable Flood Capacity
ANCOLD	Australian National Committee on Large Dams
APDD	Asset Portfolio Development and Delivery
AWTP	Advanced Water Treatment Plant
B	
BCC	Brisbane City Council
C	
CPI	Consumer Price Index
D	
DEWS	Queensland Department of Energy and Water Supply
DWQMP	Drinking Water Quality Management Plan
E	
EBA	Enterprise Bargaining Agreement
ECM	Efficiency Carryover Mechanism
EGWWS	Electricity, Gas, Water and Waste Services
ERA	Economic Regulation Authority of Western Australia
ESC	Essential Services Commission [Victoria]
ESCOSA	Essential Services Commission of South Australia
F	
FAMP	Facilities Asset Management Plan
FTE	Full-Time Equivalent

G	
GAWB	Gladstone Area Water Board
GCDP	Gold Coast Desalination Plant
GSC	Grid Service Charge
I	
ICT	Information and Communication Technology
IPART	Independent Pricing and Regulatory Tribunal [New South Wales]
K	
kL	Kilolitre (1000 litres)
L	
LCC	Logan City Council
LGC	Large-scale generation certificate
LOS	Level of Service
l/p/d	Litres per person per day
LRET	Large-scale Renewable Energy Target
M	
MAR	Maximum Allowable Revenue
MBRC	Moreton Bay Regional Council
MCS	Maintenance Control Systems
MDMM	Mean Day Maximum Month
ML	Megalitre (1 million litres)
MTP	Mt Crosby Treatment Plant
N	
NA	Not Available
O	
OCRW	Operations - Catchment and Raw Water
OESR	Office of Economic and Statistical Research (a division of Queensland Treasury and Trade)
P	
PAMF	Planning and Asset Management Framework
PMF	Probable Maximum Flood
PRA	Portfolio Risk Assessment
Q	
QCA	Queensland Competition Authority
QTC	Queensland Treasury Corporation
QTT	Queensland Treasury and Trade
R	
RAB	Regulatory Asset Base

RBA	Reserve Bank of Australia
RES	Renewable Energy Scheme
S	
SEQ	south east Queensland
SOP	System Operating Plan
SPT	Service, People and Technology
SRES	Small-scale Renewable Energy Scheme
W	
WACC	Weighted Average Cost of Capital
WCRWS	Western Corridor Recycled Water Scheme
WPI	Wage Price Index
WSAP	Water Supply Asset Plan
WSP	Water Security Program
WSSP	Water Supply Strategy and Policy
WSSR Act	*Water Supply (Safety and Reliability) Act 2008* (Qld)
WTP	Water Treatment Plant

APPENDIX A: MINISTER'S REFERRAL NOTICE

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

Referral

Pursuant to section 23(1) of the *Queensland Competition Authority Act 1997* (the Act), I refer the monopoly business activity of bulk water supply by the Queensland Bulk Water Supply Authority (Seqwater) in the local government areas listed below to the Queensland Competition Authority (the Authority) for an investigation about the pricing practices relating to that activity with the objective of recommending bulk water prices ("Prices") for Seqwater in those local government areas for the period of 1 July 2015 to 30 June 2018.

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

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

1. recommend Prices for the remaining three years of the 10-year bulk water price path which are consistent with the following:
   a) Seqwater requires sufficient revenue to recover prudent and efficient costs incurred from providing bulk water supply services, between 1 July 2008 to 30 June 2028, by 30 June 2028;
   b) repayment of 'price path debt' by 2027-28. Price path debt is the accumulated losses arising from the bulk water price path;
   c) bulk water costs include, but are not limited to:
      i. prudent and efficient capital expenditure and operating expenditure, including recreation management costs;
      ii. depreciation, using straight-line depreciation to reflect the remaining useful life of the assets;
      iii. a rate of return on assets, reflecting a cost of debt return only (calculated consistent with (B)(2) below);
      iv. interest on and repayment of price path debt; and
      v. any costs detailed in Seqwater's bulk water supply agreements.
   d) to establish the opening regulated asset base as at 1 July 2015, the QCA is to:
      i. assess Seqwater's expected actual capital expenditure in 2013-14 and Seqwater's forecast capital expenditure for 2014-15 in line with the approach described for capital expenditure in (A)(5) below;
      ii. roll forward the regulated asset base from 1 July 2013 to 30 June 2015 based on the findings as per (A)(1)(d)(i) above; and
      iii. roll forward depreciation and appreciation.

1

e) To establish the opening price path debt as at 1 July 2015, the QCA is to:
   i. roll forward the price path debt from 1 July 2013 to 30 June 2014 based on the assessment of Seqwater's operating expenditure for 2013-14 and the assessment of Seqwater's actual capital expenditure for 2013-14 as per (A)(1)(d)(i) above; and
   ii. roll forward the price path debt determined in (A)(1)(e)(i) above from 1 July 2014 to 30 June 2015 based on the findings from the assessment of forecast capital expenditure for 2014-15 as per (A)(1)(d)(i) above and the assessment of operating expenditure as per (A)(5) below.

f) the Price for each council area, except for Redland, Sunshine Coast and Noosa, is to increase so that all councils pay the same Price from 2017-18 (the 'common price');

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

h) the Price for each council area is to be increased annually to achieve the 'common price' as follows:
   i. for councils yet to reach the common price, other than Redland, Sunshine Coast and Noosa, Prices must increase by the same dollar per megalitre each year (the 'common price increase');
   ii. where the common price increase is higher than necessary for a specific council area to reach the common price, then the increase required for the council area to reach the common price should be applied;
   iii. once a council area reaches the common price, its price should only increase each year by inflation.

i) Prices are to remain constant in real terms once the common price has been reached until 2027-28;

j) Prices are to be volumetric only.

2. recommend the price path and impact on bulk water debt of extending the price path arrangements for Redland, Sunshine Coast and Noosa by two years;

3. recommend mid-price path review triggers and other mechanisms to manage cost and volume risks outside the control of Seqwater in order to provide Seqwater with cost recovery certainty;

4. recommend an appropriate approach for reviews of expenditure for the period following 1 July 2015, including rules and procedures for determining the price path debt and cost recovery position throughout the price path, and providing Seqwater with cost recovery certainty;

5. to assess operating expenditure ('opex') and capital expenditure ('capex'), the Authority must adopt the following approach:

   a) assess the existence of robust policies and procedures having regard to good industry practice, as well as compliance, using a sample of no more than ten capex projects and each of the following broad opex headings: employee expenses (including contractors); electricity; other materials and services; corporate overheads;

   b) assess the robustness of the capex and opex program planning and delivery processes and procedures in an overall sense and identify any areas for improvement;

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

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

e) capex must be reviewed in light of demand forecasts under (B)(6) below.

(B) In conducting its investigation and making the recommendations, the Authority is to accept the following matters:

1. the regulated asset base as at 30 June 2013 is to be as advised by the Minister for Energy and Water Supply and is not to be optimised;
2. the rate of return to be used for the Prices is the long term cost of debt as advised by the Queensland Treasury Corporation;
3. bulk water costs are to be offset by: revenue from (a) sale of water to power stations and (b) Toowoomba Regional Council as advised by Seqwater;
4. any other revenues from Seqwater's bulk water supply agreements, other than those associated with the Prices, are to be offset from bulk water costs;
5. costs associated with Seqwater's declared irrigation services are to be excluded. Costs from 1 July 2013 are to be as recommended in the Authority's report "Final Report - Seqwater Irrigation Price Review - 2013-17 - July 2012";
6. Seqwater's demand forecasts provided this demand forecast includes a long term residential demand of 185 litres per person per day (L/p/d) and a non-residential demand of 91 L/p/d (not including demand from power stations and Toowoomba Regional Council). The timing of reaching the long term demand forecasts is to be accepted as advised by Seqwater. Power stations' demand and demand from Toowoomba Regional Council is also to be accepted as advised by Seqwater; and
7. the price path debt as at 1 July 2013 is to be as advised by the Minister for Energy and Water Supply.

(C) Timing

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

i. a Draft Report to me and the Minister for Energy and Water Supply, by 30 November 2014; and

ii. a Final Report by 31 March 2015.

TIM NICHOLLS
Treasurer and Minister for Trade

05 MAY 2014

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APPENDIX B: MINISTER'S LETTER OF CLARIFICATION

Queensland Government

Treasurer and Minister for Trade

QLD COMPETITION AUTHORITY
07 OCT 2014
DATE RECEIVED

Level 9 Executive Building
100 George St Brisbane
GPO Box 611 Brisbane
Queensland 4001 Australia
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TRY-07918

2 OCT 2014

Dr Malcom Roberts
Chairman
Queensland Competition Authority
GPO Box 2257
BRISBANE QLD 4001

Dear Dr ~~Roberts~~ Malcolm,

REFERRAL NOTICE FOR THE REVIEW OF SEQ BULK WATER PRICES

I refer to the Referral Notice issued pursuant to section 23 of the *Queensland Competition Authority Act 1997* (the Act) and gazetted on 5 May 2014, requiring the Queensland Competition Authority (the Authority) to conduct an investigation into bulk water prices for the Queensland Bulk Water Supply Authority (Seqwater) for the period 1 July 2015 to 30 June 2018.

I am advised that the Authority has sought clarification on the operation of clauses (A)(1)(f)-(h) of the Referral Notice, insofar as they may be interpreted so as to curtail the Authority's discretion in recommending prices for each council area. Specifically, I understand that the Authority is seeking confirmation that the direction of any price adjustments it recommends should not be limited to price increases.

Pursuant to sections 23(4)-(5) of the Act, I hereby confirm that the operative clauses of the Referral Notice should be interpreted in such a way that the Authority is not fettered with respect to the direction of the price adjustments it recommends.

Please direct any questions in respect of the foregoing advice to Mr Greg Tonks, Director, Shareholder and Structural Policy Division on (07) 3035 1487.

Yours sincerely

Tim Nicholls
Treasurer and Minister for Trade

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