2013-14 Irrigation pricing

Submission to the Queensland Competition Authority

2 November 2012

Contents

Executive Summary

The Queensland Competition Authority (QCA) is to review and set Queensland Bulk Water Supply Authority's (Seqwater's) irrigation prices in the following Water Supply Schemes (WSS) for the period 2013-14 to 2016-17:

- Central Lockyer Valley, as well as the Morton Vale Pipeline;
- Lower Lockyer Valley;
- Logan River;
- Warrill Valley;
- Mary Valley;
- Cedar Pocket; and
- Central Brisbane River.

The QCA is required to establish prices that reflect efficient operating, maintenance and administration costs, as well as a renewals annuity to recover prudent and efficient asset replacements and rehabilitation costs. This level of cost recovery is commonly referred to as the lower bound.

This submission is provided to the QCA to assist in explaining Seqwater's forecast lower bound costs for each WSS and associated lower bound reference tariffs for the period 2013-14 to 2016-17. In addition, separate Network Service Plans (NSPs) are provided for each WSS. This is an update to Seqwater's submission first made in April, 2012 and incorporates changes foreshadowed in that original submission, as well as other amendments. The most significant change results from updates to renewals balances and renewals expenditure, as well as slight modifications to operating costs. A variable charge has also been calculated for the Pie Creek tariff group within the Mary Valley WSS.

Since making the original submission, the QCA has completed its review of SunWater's irrigation prices for 2012-13 to 2016-17. The QCA published a draft report in November, 2011 and a final report dated May 2012.[1] Seqwater has sought to be consistent with the QCA's recommendations where possible including in relation to the treatment of volume and cost risks.

In accordance with the Referral Notice, Seqwater considers it should not bear cost risks it is not able to manage or control. This includes unforeseen events, as well as costs that are uncertain

[1] QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report.

and difficult to forecast, such as pumping costs for off stream storages. Seqwater considers that an end-of-period adjustment should be provided for these cost risk events.

Lower bound cost forecasts

Seqwater has prepared lower bound cost forecasts for each of the WSS based on a forecast renewals annuity and operating expenditure over the 2013-14 to 2016-17 period.

The renewals annuity is based on forecast opening renewals annuity balances at 1 July, 2013 and forecasts of renewals expenditure over a 20 year period.

Forecast operating expenditure includes both direct and non-direct expenditure and is based on operating expenditure in a representative base year (2012-13) escalated forward on the basis of predetermined escalation factors. The base year adopts the costs presented to the QCA for its review of Grid Service Charges for the 2012-13 year. The QCA has since published a draft report recommending Grid Service Charges for the 2012-13 year however a final report is yet to be released. While Seqwater would prefer to wait until the 2012-13 base year is finalised, the QCA has requested that amended NSPs be provided before the 2012-13 GSCs are released.

Accordingly, Seqwater has not updated the operating costs for the 2012-13 year as final information is not yet available. However, Seqwater submits that the operating costs that form the 2012-13 base year should be updated to reflect the QCA's final recommendations. This may affect both or either the direct costs in the above WSS, as well as the non-direct cost pool and the allocation of those costs.

Hence the operating costs in this submission and accompanying NSPs, along with the lower bound reference costs and reference tariffs should be considered interim and do not represent Seqwater's final position. Notwithstanding this situation, lower bound costs for each WSS have been provided, with those costs allocated to different priority groups (medium and high) within the schemes. In doing so, Seqwater has adopted the same approach as that recommended by the QCA in its SunWater report.

Resultant lower bound cost forecasts attributable to medium priority Water Access Entitlements (WAE) are presented in Table E-1 below. These are relevant to irrigation tariffs, as irrigators hold medium priority (or equivalent) in each WSS.

Table E-1. Total lower bound costs for medium priority WAE ($000, nominal)

Cost	2013-14	2014-15	2015-16	2016-17
Operating costs				
Direct	2,393.0	2,479.1	2,555.9	2,710.3
Non-direct	1,712.8	1,755.6	1,799.5	1,844.4
Renewals	704.8	714.9	720.8	731.9
Total	**4,810.6**	**4,949.6**	**5,076.1**	**5,286.6**

The associated total lower bound costs for each of the tariff groups are provided below. The Morton Vale and Pie Creek tariff groups are presented in 'unbundled' terms, with their costs separated from their respective WSS.

Table E-2. Lower bound costs for medium priority WAE – by tariff group ($000, nominal)

Tariff group	2013-14	2014-15	2015-16	2016-17
Logan River	372.5	384.0	395.5	417.6
Central Brisbane River	364.3	375.1	389.1	406.8
Mary Valley	603.1	617.9	646.5	650.0
Warrill Valley	520.1	536.2	552.4	580.0
Lower Lockyer	1,426.1	1,441.9	1,480.8	1,521.3
Central Lockyer	1,073.0	1,126.9	1,127.7	1,182.1
Morton Vale Pipeline	2.6	5.6	8.8	12.1
Cedar Pocket	144.5	149.0	153.7	186.0
Pie Creek	304.3	313.1	321.6	330.5
Total	**4,810.**	**4,949.6**	**5,076.1**	**5,286.6**

Lower bound reference tariffs

Seqwater has nominated a single tariff group for six of the seven WSS, and for the Morton Vale Pipeline. An additional tariff group, Pie Creek, is to continue in the Mary Valley WSS.

Proposed irrigation tariffs for each of the tariff groups have been prepared on the basis of forecast lower bound costs.

The QCA's SunWater report recommended that short term volume risk should be assigned to customers through a tariff structure that recovers fixed costs through fixed charges and variable costs through variable charges. Seqwater considers that variable costs exist in the Pie Creek tariff group only, where water is pumped from the Mary River to meet customer demand. On this basis, Seqwater has proposed that all tariffs (with the exception of Pie Creek) consist of a single fixed charge. In the Central Lockyer, where WAEs have not been issued to individual customers, a fixed charge cannot apply as this charge is levied in accordance with a customer's WAE. Seqwater proposes that an interim volumetric charge apply until these individual WAE are specified. In order to achieve the same allocation of volume risk, a revenue cap with an end of period unders and overs adjustment will need to apply to adjust for actual versus forecast revenues.

The Pie Creek section of the Mary Valley WSS is a discrete, additional part of the scheme. The creek itself is supplemented by diversions from the Mary River. The Pie Creek scheme is integrated within the Mary Valley WSS.

The pricing practices under prior SunWater ownership have been to attribute the costs of Pie Creek solely to Pie Creek users, in addition to their share of the remaining Mary Valley WSS costs (i.e. Borumba Dam and Imbil Weir).

Seqwater proposes to continue the past practice, and has calculated prices accordingly.

Proposed irrigation tariffs for the 2013-14 to 2016-17 regulatory period are provided in Table E-3.

Table E-3. Proposed lower bound reference tariffs by tariff group - $/ML ($nominal)

Tariff Group	Part	2013-14	2014-15	2015-16	2016-17
Cedar Pocket					
Fixed component based on WAE	A	306.07	313.72	321.57	329.61
Variable component based on usage	B	0	0	0	0
Central Brisbane River					
Fixed component based on WAE	A	52.44	53.75	55.09	56.47
Variable component based on usage	B	0	0	0	0
Central Lockyer					
Where WAE are issued or defined for individual customers					
Fixed component based on WAE	A	66.53	68.19	69.90	71.65
Variable component based on usage	B	0	0	0	0
Morton Vale Pipeline additional fixed component based on WAE	C	5.45	5.58	5.72	5.87
Morton Vale Pipeline additional variable component based on usage	D	0	0	0	0
Where WAE have not been issued or defined for individual customers (interim)					
Fixed component based on WAE	A	0	0	0	0
Variable component based on usage	B	210.50	215.76	221.15	226.68
Logan River					
Fixed component based on WAE	A	27.85	28.54	29.26	29.99
Variable component based	B	0	0	0	0

Tariff Group	Part	2013-14	2014-15	2015-16	2016-17
on usage					
Lower Lockyer					
Fixed component based on WAE	A	125.39	128.52	131.73	135.03
Variable component based on usage	B	0	0	0	0
Mary Valley					
Fixed component based on WAE	A	27.77	28.46	29.17	29.90
Variable component based on usage	B	0	0	0	0
Pie Creek additional fixed component based on WAE	A1	387.49	397.18	407.11	417.28
Pie Creek additional variable charge based on usage	B1	55.72	57.11	58.54	60.00
Total Pie Creek fixed component based on WAE	A+A1	415.26	425.64	436.28	447.18
Total Pie Creek variable charge based on usage	B+B1	55.72	57.11	58.54	60.00
Warrill Valley					
Fixed component based on WAE	A	25.63	26.27	26.93	27.60
Variable component based on usage	B	0	0	0	0

Current irrigation tariffs consist of a fixed and variable component. To provide an indication of the adequacy of current prices to recover proposed lower bound costs, tariffs for 2012-13 have been converted to a single fixed tariff.[2] This process involved converting the variable component of tariffs to a fixed charge based on forecast usage assumed for those tariffs in SunWater's 2006 Tier 1 report.

A comparison of the relevant 2012-13 and proposed 2013-14 tariffs is provided below. In most WSS, the 2006 SunWater tariffs did not recover lower bound costs and were instead subject to a price path, with increases of up to $10/ML over a 5-year period.

[2] The analysis compares tariffs rather than revenues, since historic water use for tariff groups has been largely lower than that forecast in 2006.

Table E-4. Comparison of 2012-13 prices and 2013-14 lower bound reference tariffs ($/ML)

	Logan River	Mary Valley	Warrill Valley	Lower Lockyer	Central Lockyer	Cedar Pocket	Pie Creek*	Morton Vale Pipeline*	Central Brisbane
2012-13 equivalent fixed tariff	32.85	22.37	31.25	34.97	33.76	22.40	58.03	31.39	0.00
2013-14 equivalent fixed charge (lower bound)	27.85	27.77	25.63	125.39	66.53	306.7	415.26	71.98	52.44

** Bundled price for comparison purposes.*

Note: No prices were previously applied to the Central Brisbane tariff group.

In comparison to estimated 2012-13 prices under the existing price path, Table E-4 suggests that:

- the current prices for Warrill Valley and Logan River are already above those required to recover lower bound costs. This is consistent with the outcomes from the 2006 SunWater review;
- prices in Central Brisbane will need to be introduced;
- despite meeting the SunWater 2006 lower bound reference tariff during the last price path, modest increases in the Mary Valley tariff group are required to meet the forecast lower bound costs for 2013-14 and beyond;
- prices in the other tariff groups, which did not reach lower bound cost recovery in the 2006 price path, remain below the required level of cost recovery and real price increases are required; and
- as a consequence of a large surplus balance in the Asset Restoration Reserve, the Morton Vale tariff group Part C charges are insufficient to recover operations and maintenance outlays. This will require further consideration.

Price path

The Referral Notice requires that any prices rises for customers already above lower bound costs be restricted to increases in inflation. This will apply to the Warrill Valley and Logan River.

For the Central Lockyer, Lower Lockyer Valley, Pie Creek and Cedar Pocket tariff groups, the Referral Notice requires the QCA to apply real increases at a pace consistent with the 2006-11 price path period, until the lower bound reference tariffs are reached. For the 2006-11 price paths, the pace of real price increase was:[3]

[3] SunWater (2006). Statewide Irrigation Pricing Working Group. Teir 1 Report (p9).

- a minimal increase in the first year of the 5-year price path;
- a maximum increase of $10/ML over the 5 year period; and
- a maximum increase of $2.50/annum over the last four years of the price path.

The Referral Notice also requires the QCA to recommend a price path where a real increase is required. Accordingly, Seqwater expects the QCA will also recommend a price path for Central Brisbane and Mary Valley tariff groups. To the extent that the QCA implements price paths for those prices below forecast lower bound, Seqwater considers that the QCA should recommend how any shortfall between forecast and actual revenue received by Seqwater during the regulatory period should be recovered. If the QCA is to recommend price paths that do not achieve lower bound cost recovery (for example a price path that is not NPV neutral), then it should be satisfied that Seqwater will be able to recover the shortfall under an extension of the existing CSO arrangements.

Chapter 1 – Introduction

The Queensland Bulk Water Supply Authority (Seqwater) stores and treats water from dams, weirs, bores and other water storages, and also supplies desalinated water from the Gold Coast Desalination Plant (GCDP) and purified water from the Western Corridor Recycled Water Scheme (WCRWS).

Seqwater is a Grid Service Provider (GSP) under the South East Queensland Water Market Rules (SEQ Market Rules). Seqwater also supplies raw water to some 1,455 irrigation customers, as well as industrial users and local governments. These water users hold Water Access Entitlements (WAE) from seven Water Supply Schemes (WSS) owned by Seqwater:

- Cedar Pocket Water Supply Scheme;
- Central Brisbane River Water Supply Scheme[4].
- Central Lockyer Water Supply Scheme;
- Logan River Water Supply Scheme;
- Lower Lockyer Water Supply Scheme;
- Mary Valley Water Supply Scheme; and
- Warrill Valley Water Supply Scheme.

Seqwater also owns a distribution system, the Morton Vale Pipeline, which supplies irrigators taking water in the Central Lockyer WSS.

1.1 Referral Notice

The Queensland Competition Authority (QCA) has been directed by the Queensland Government to develop irrigation prices for the above seven WSSs (the Referral Notice). Seqwater has assumed that the Morton Vale Pipeline, which is a distribution system taking water from the Central Lockyer WSS, is also intended to be included in this review. Prices are to apply for the four-year period, 1 July 2013 to 30 June 2017 (the regulatory period).

The QCA is to establish prices that reflect efficient operating, maintenance and administration costs, as well as a renewals annuity to recover prudent and efficient asset replacements and rehabilitation costs. If existing prices are above the lower bound cost, then those prices are to continue in real terms. If real price rises are needed to reach lower bound, then the QCA is to recommend a price path.

[4] It has been assumed that the Stanley River WSS is included, on the basis that these schemes are managed jointly.

The QCA is required to provide a draft report including draft irrigation prices by 30 November 2012 and a final report with recommended price paths by April 2013.

The Referral Notice also requires Seqwater to submit Network Service Plans (NSPs) to the QCA by 30 April, 2012. This document is an update to the submission made in April, 2012.

1.2 Lower bound pricing

Pricing that recovers efficient operating, maintenance and administration costs, and future renewals expenditure is commonly referred to as the "lower bound" level of cost recovery of the very basic costs that must be recovered. This concept of lower bound pricing emerged through various policy reforms, and the associated pricing principles were most recently re-stated in the National Water Initiative (NWI) pricing principles, and included the following:[5]

> *4. To avoid monopoly rents, a water business should not recover more than the operational, maintenance and administrative costs, externalities, taxes or TERs [tax equivalent regime], provision for the cost of asset consumption and cost of capital, the latter being calculated using a WACC [weighted average cost of capital]. [Upper Bound pricing]*
>
> *5. To be viable, a water business should recover, at least, the operational, maintenance and administrative costs, externalities, taxes or TERs (not including income tax), the interest cost on debt, dividends (if any) and make provision for future assets refurbishment/ replacement (as noted in (3) above). Dividends should be set at a level that reflects commercial realities and stimulates a competitive market outcome. [Lower Bound pricing]*
>
> *6. In applying (4) and (5) above, economic regulators (or equivalent) should determine the level of revenue for a water business based on efficient resource pricing and business costs. Specific circumstances may justify transition arrangements to that level.*

Accordingly, lower bound price reviews establish the minimum level of cost recovery. This contrasts with normal regulatory reviews, which are focussed on establishing the maximum level of cost recovery (upper bound). In broad terms of economic efficiency, prices are efficient up to the upper bound.

In recommending lower bound prices, the QCA should be attentive to the risks of regulatory error that could result in prices being set that do not enable Seqwater to recover efficient lower bound costs.

[5] National Water Initiative pricing principles, Steering Group on Water Charges, 2010. (http://www.environment.gov.au/water/publications/action/pubs/nwi-pricing-principles.pdf)

1.3 Review of 2012-13 Grid Service Charges

The QCA was directed to review Grid Service Charges (GSCs) from Seqwater for 2012-13. Seqwater lodged its submission to the QCA on 29 February, 2012 and the QCA published a draft report in April, 2012 and a final report in July, 2012. The Price Regulator has subsequently advised Seqwater of the GSCs to apply for 2012-13.

The review of GSCs examined the same assets and costs that also directly relate to the supply of water to irrigators, although for the 2012-13 year only.

This means that two regulatory processes apply in parallel for (nearly) the same group of assets and costs. It is therefore important that one process does not occur in isolation to the other. Irrigation prices and GSCs should align so that efficient costs can be recovered in total, without double-recovery or under-recovery between the two regimes. Accordingly, Seqwater expects that the QCA's decisions for certain matters on irrigation pricing will establish the precedent for pricing from the same assets for GSCs (e.g. for cost allocation).

The 2012-13 GSC review is also relevant to irrigation prices in so far as Seqwater's operating cost forecasts are based on its 2012-13 expenditure, as submitted to the QCA. That is, the 2012-13 operating costs are used as the baseline for projecting costs over the regulatory period for irrigation pricing. Seqwater's preference is for consistency between the operating costs approved for GSCs and those used as the base year for irrigation pricing.

At the time of providing Seqwater's original submission in April 2012 and revised submission in September 2012, the 2012-13 GSCs were yet to be approved by the Price Regulator. The Price Regulator has since advised Seqwater of the GSCs to apply for 2012-13. Accordingly, this submission reflects Seqwater's amended cost estimates and tariffs based on the approved 2012-13 GSCs.

In addition, this submission provides revised Asset Restoration Reserve (ARR) balances. Due to data limitations and time constraints, the original ARR balances were produced on an irrigation only basis and then converted to total scheme (all customer sectors) balances.

Seqwater has since engaged Indec to produce ARR balances on a total scheme basis adopting a first principles approach based on all customer sector data which does not involve any conversion processes from irrigation only to total scheme balances.

This submission also includes Seqwater's proposals to rationalise and adjust the interim pricing arrangements that previously existed for GSCs, in particular the recovery of renewals expenditure in ex-SunWater WSSs that were shared between irrigators and the WGM. In short, this proposal is to retrospectively apply the arrangements that were originally contemplated for renewals accounting in the SunWater 2006 price paths, and will require a minor reduction to the Regulated Asset Base (RAB) for GSCs to avoid double-recovery of the same costs between irrigation prices and GSCs. This is discussed in Chapter 6.

1.4 QCA review of SunWater irrigation prices

The QCA has completed its review of SunWater's irrigation prices for the period 2012-13 to 2016-17. Seqwater has sought to be consistent with the QCA's recommendations where possible.

1.5 This submission

Seqwater has provided this submission as an over-arching explanation of its regulatory, pricing and expenditure proposals. A separate NSP is provided for each WSS.

This has been done to avoid repetition, and to allow each NSP to be targeted to matters of particular relevance to each scheme.

This submission is an update to Seqwater's revised submission provided in September 2012. The key changes are:

- adjustments to operating expenditure to reflect cost savings identified in the Price Regulator's approved 2012-13 GSCs;
- updates to renewals balances;

This submission is set out as follows:

- Chapter 2 provides an overview of Seqwater's business;
- Chapter 3 presents summary information on each WSS and the Morton Vale Pipeline, including WAE serviced, current prices and proposed infrastructure relevant to irrigation pricing;
- Chapter 4 presents Seqwater's submission in relation to the regulatory framework;
- Chapter 5 sets out Seqwater's position on the pricing framework;
- Chapter 6 presents Seqwater's proposed renewals annuity;
- Chapter 7 provides an overview of proposed operating expenditure over the regulatory period;
- Chapter 8 presents aggregate lower bound costs; and
- Chapter 9 presents reference tariffs to recover the lower bound cost target.

The following attachments are referred to in this report:

- Seqwater team summaries;
- Irrigation Infrastructure Renewal Projections Methodology;

- Parsons Brinckerhoff Hydrologic Assessment of Headworks Utilisation Factors; and
- Indec review of opening ARR balances.

NSPs for each WSS are also provided as attachments.

All figures presented in this submission are provided in nominal terms unless otherwise indicated.

1.6 Glossary of defined terms

Figure 1.1 is a glossary of terms defined in this document.

Figure 1.1 – Glossary of defined terms

ABS	Australian Bureau of Statistics
AER	Australian Energy Regulator
ARR	Asset Restoration Reserve
AWTP	Advanced Water Treatment Plant
BOOT	Build-Own-Operate-Transfer Scheme
BRCI	Benchmark Retail Cost Index
CIS	Corporate Information System
CPI	Consumer Price Index
CSO	Community Service Obligation
DERM*	Department of Environment and Resource Management
EBA	Enterprise Bargaining Agreement
Economic Regulator	Queensland Competition Authority (see also QCA)
FAMP	Facility Asset Management Plans
GCDP	Gold Coast Desalination Plant
GSC	Grid Service Charge
GSP	Grid Service Provider

HUF	Headwork's Utilisation Factor
ICT	Information, Communication and Technology
IROL	Interim Resource Operations Licence
Lower bound cost	As defined by COAG, Lower Bound Pricing is the level at which to be viable, a water business should recover, at least, the operational, maintenance and administrative costs, externalities, taxes or TERs (not including income tax), the interest cost on debt, dividends (if any) and make provision for future asset refurbishment/replacement.
ML	Megalitre
NAMP	Natural Asset Management Plans
NPV	Net Present Value
NSP	Network Service Plan
Part A	Fixed tariff component
Part B	Volumetric (variable) tariff component
PB	Parsons Brinckerhoff
QCA	Queensland Competition Authority
QTC	Queensland Treasury Corporation
QWC	Queensland Water Commission
RAB	Regulated Asset Base
RAMP	Recreation Asset Management Plans
RBA	Reserve Bank of Australia
Regulatory period	1 July 2013 to 30 June 2017
ROL	Resource Operations Licence

ROP	Resource Operations Plan
SEQ	South East Queensland
SEQ Market Rules	South East Queensland Water Market Rules
Seqwater	Queensland Bulk Water Supply Authority
WACC	Weighted Average Cost of Capital
WAE	Water Access Entitlements
WASO	Water Allocation Security Objective
WCRWS	Western Corridor Recycled Water Scheme
WGM	Water Grid Manager
WRP	Water Resource Plan
WSS	Water Supply Scheme
WTP	Water Treatment Plant
WWTP	Wastewater (Sewage) Treatment Plant

* Or its equivalent.

Chapter 2 – Business overview

This chapter provides a summary of Seqwater's customers, its assets and its organisational arrangements.

2.1 History and context of business

Seqwater commenced operations in 2008-09, after it was transferred a range of water supply assets from local governments, SunWater, SEQWater Corporation and others. Over the past five years, Seqwater has successfully managed a number of significant challenges affecting its operations and development.

These have included the initial transfer and consolidation of a disparate workforce and a diverse range of assets, undertaken various critical and transitional work needed in the initial stages of operation, the commissioning and operation of a suite of major new drought assets (such as Wyaralong Dam which was transferred on 1 July 2011), and the recent merger with WaterSecure.

Consolidation of asset base and critical works

Most of Seqwater's water assets were acquired between February and July 2008 via the water market reform process and were transferred from a range of previous owners including many local governments. Seqwater did not take operational responsibility for most of these assets until 1 July 2008 and, in cases where the transfers occurred earlier than this date, the previous owners generally continued to operate the assets under Interim Service Level Agreements until 30 June 2008. Even after 1 July 2008, many of the assets continued to be operated under Service Level Agreements for some time.

In the years immediately following the acquisition of these assets, Seqwater's operations focused on work critical to maintaining ongoing supply. Significant attention was placed on merging the staff acquired from the former organisations into one cohesive and dedicated workforce. Other significant work related to the alignment of these assets, to create consistency in terms of compliance and coordination in their operations.

Financial information

At the time of commencing operations in 2008-09, Seqwater's financial systems were basic and while sufficient for financial reporting, did not reflect the systems required of a regulated business. Seqwater implemented a new Corporate Information System (CIS) which enabled cost and other data to be captured and budgeted by asset location. This system starting recording data from the 2009-10 year, and has been used as the basis for the expenditure forecasts for regulatory submissions. Whilst the granularity of the data in this system has improved each year,

the quality of information has also improved since the implementation year (2009-10) compared to the current 2011-12 year and the 2012-13 budget.

Transfer of assets related to irrigation supplies

The reform process outlined above resulted in six WSSs (Central Lockyer, Logan, Lower Lockyer, Mary Valley, Cedar Pocket and Warrill) and the Morton Vale Pipeline being transferred to Seqwater from SunWater, effective from the 2008-09 year (together referred to as ex-SunWater schemes).[6]

Seqwater inherited the 2006 price paths, as well as the contractual arrangements in place at that time.

Seqwater was also transferred the storage assets that comprise the seventh WSS subject to this review, the Central Brisbane River WSS, from SEQWater Corporation Limited. Supplies to irrigation users in this scheme were previously managed by the Department of Environment and Resource Management (DERM). No prices applied when the assets were transferred, and Seqwater has not applied prices since as it was expected they would be set as part of this regulatory process.

Merger with WaterSecure

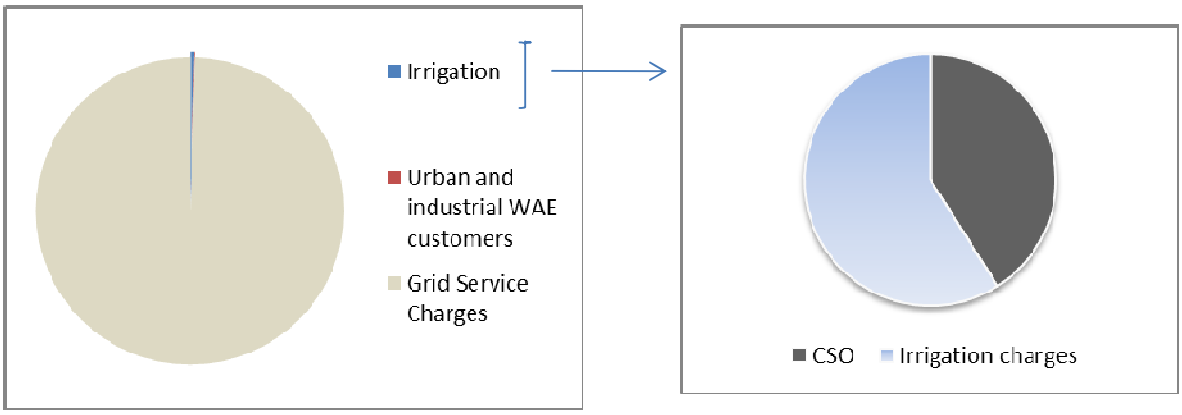
The merger of Seqwater and WaterSecure was announced on 5 December 2010, with the merger taking effect on 1 July 2011. The merger process required significant work, including developing a merged organisational structure, transferring staff, and integrating assets, systems, policies and procedures in the new merged entity.

2.2 Customers

Seqwater provides bulk treated water (drinking and recycled) water to the Water Grid Manager (WGM), and also services irrigation and other WAE holders. The majority of Seqwater's regulated revenues are from the WGM (99.5%), with the remaining 0.5% of revenue coming from irrigation charges, a Government CSO (representing the shortfall between irrigation charges and the lower bound cost of irrigation supplies), and sales to urban and industrial customers who hold WAEs. The figure below provides an illustration.

[6] The Cedar Pocket WSS was established subsequently.

Figure 2.1. Composition of regulated revenue.



A brief overview of each customer group follows.

The Water Grid Manager

Seqwater is a GSP under the SEQ Market Rules, and provides water to the SEQ Water Grid via the WGM. Water is ultimately supplied to three distributor-retailer entities in SEQ. The WGM has the supply and contractual interface for supplying recycled water directly to major industrial water users, as well as a limited number of irrigators in the Central Brisbane River WSS.[7]

Revenues from GSCs for 2012-13 are currently being finalised. The QCA recommended GSC revenues of $705.3 million for 2011-12.

Seqwater has a contract with the WGM, and is also subject to the SEQ Grid Market Rules. Seqwater has obligations to comply with the Australian Drinking Water Guidelines (ADWG), which include a multi-barrier approach to water quality management. This includes measures to protect or enhance raw water quality. Seqwater also has specific contractual obligations to manage catchments in accordance with good operating practice.

Irrigation customers

Seqwater provides water services to approximately 1,455 rural irrigators operating within seven WSSs.

The irrigation customers are rural landholders and businesses with WAEs to use that water for irrigation purposes. These customers use the water to support a wide variety of farming and agriculture activities, such as orchards, vegetable and fodder crops, dairy and grazing.

[7] The WGM owns the majority of water access entitlements in the Central Brisbane River Water Supply Scheme, and has a small number of legacy contracts with irrigators for supply of water under the entitlements. Seqwater has no contractual relationship with these specific irrigators.

Revenue from irrigation charges for 2012-13 is budgeted at $2.0M, arising from price paths set in 2006 (the 2006 price review) by SunWater, under a negotiate-arbitrate model with irrigation representatives.[8] No prices currently apply in the Central Brisbane River WSS, and Part A (fixed) charges are not levied in Central Lockyer.

Supply contracts and standards of service – bulk water supply

Irrigation supplies in all WSS are subject to contractual terms. These are, by and large, standard across all users and reflect the standard supply contracts set under the *Water Act 2000*.

The most recent of these contracts was approved for the Central Brisbane River WSS on 27 November, 2009.[9]

Under this standard contract, the customer, as owner of the WAE, bears the risk of the availability of water under their WAE. Customers can also trade WAE in accordance with the requirements of any Resource Operations Plan (ROP) or Interim Resource Operations Licence (IROL). These terms of supply are identical to those examined by the QCA in its SunWater report, and the QCA's observations about the implications for the regulatory framework equally apply (particularly section 3.4).[10]

The contractual terms in relation to water quality are substantially different to the obligations that apply to irrigators. For irrigators, the standard contract explicitly states that Seqwater makes no warranty about water quality, and will not take any actions, measures or steps to prevent any adverse effects on the quality of water supply supplied.[11] In contrast, the supply of grid water sets standards for water quality, including obligations to manage catchments to mitigate water quality risks.

Morton Vale Distribution System

Customers on the Morton Vale Pipeline hold a separate contract. These contracts were executed by customers and the Primary Industries Corporation in or around 1995, and specify:

- a nominal allocation (effectively a WAE) for each customer;
- payment of a charge to recover the capital cost of the distribution system (a capital charge), over a 30 year term;
- payment of charges for water taken from Lake Clarendon as determined under the Water Resources (Rates and Charges) Amendment Regulation or subsequent legislation; and

8 Refer to SunWater (2006a). Statewide Irrigation Pricing Working Group- Tier 1 Report, and SunWater (2006b) Irrigation Price Paths 2006-07 to 2010-11 - Final Report. September.

9 Refer to http://www.derm.qld.gov.au/water/management/pdf/rols/ssc_central_bris_wss.pdf

10 QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. pp 26-34.

11 Refer to Clause 15of the standard contract in particular.

- an early termination fee, which is a pay out of the capital charge.

Customer service standards

Service standards have been established in all WSSs, except Central Lockyer and Central Brisbane River. Where service standards exist, they were established in consultation with customer representatives in 2001 and were carried across to Seqwater from SunWater Limited.

Each NSP sets out the service standards as they relate to that scheme.

Other services

No other services are provided to irrigation customers. That is, unlike SunWater, Seqwater does not have drainage assets or provide drainage services, nor does it offer channel harvesting products.

Community Service Obligation Agreement – rural irrigation pricing

Seqwater has a Community Service Obligation (CSO) agreement with DERM. This CSO agreement provides funding for the difference between the prices currently paid by irrigators in ex-SunWater schemes, and irrigators' share of lower bound costs as determined in a previous price review.

Revenue from the CSO for 2012-13 is budgeted at $1.3 million.

Other industrial and urban customers

Seqwater supplies water to the Gympie Regional Council and other bodies such as local sporting clubs and water boards who directly hold water access entitlements from dams.

Revenue from these customers for 2012-13 is budgeted at $0.6 million.

2.3 Regulated assets and services

Seqwater owns and manages a range of water supply assets. Table 2.1 below presents a summary of these assets.

***Table 2.1* – Asset overview**

Asset type	Asset type	Number
Water storage	Dams	26
	Weirs	47
	Off-stream storages & lagoons	6
Groundwater	Bores and bore fields	6
Water treatment	Water treatment plants supplying the WGM [1, 2]	44
	Desalination plants	1
	Advanced water treatment plants	3
	Recycled water pipeline network	1
	Other water treatment plants (recreation sites etc)	7

Notes:

1. The total of 44 WTPs servicing the WGM include 5 that are currently not operational and 6 that are operational but will not supply volume in 2012-13.

2. Seqwater also owns and operates many pipelines, pump stations, water reservoirs and river intakes that are associated with and physically connected to water treatment facilities. For most internal purposes, and for the purposes of this submission, costs associated with such minor assets are grouped by allocating them to the major asset (usually a WTP) to which they are connected. For example, the Mount Crosby Eastbank WTP is considered to include reservoirs on Holts Hill and Camerons Hill that are used in the water treatment process, as well as the minor pipelines linking the WTP to these reservoirs, and the costs associated with these minor assets are included in the costs of the WTP itself.

The following sections present a more detailed description of the nature and function of the types of water supply assets owned by Seqwater.

Water storages

Seqwater owns 26 dams, 47 weirs and 6 off-stream storages and lagoons across SEQ, covering 363.5 square kilometres from Little Nerang Dam on the Gold Coast to the south, to Cedar Pocket Dam on the Sunshine Coast to the north, and west to Clarendon Dam.[12]

In terms of land, Seqwater owns the land inundated by dams, up to the flood margin, but does not generally own other land in the dam catchment. At some storages (such as Wivenhoe and Somerset) Seqwater owns some limited land holdings beyond the flood margin as a result of acquisitions at the time of construction, but these are small percentages of the entire catchment, which is typically held for commercial activities including farming.

Water treatment

Seqwater owns and operates a total of 51 water treatment plants (WTPs) throughout SEQ, of which 44 provide services to the WGM (although five are not operational). There are seven smaller WTPs that provide water to staff in remote locations, while others are required to supply water to recreation areas at Seqwater's dams.

Seqwater also manages a number of water assets constructed in response to the recent drought and transferred to Seqwater when it was merged with WaterSecure on 1 July 2011. These assets supply manufactured water and include the seawater reverse osmosis desalination plant at the Gold Coast (the GCDP), and the Western Corridor Recycled Water Scheme (WCRWS). The GCDP and WCRWS service the WGM exclusively.

Groundwater bores

Seqwater manages six groundwater bore areas. The majority of these groundwater bore fields were constructed in response to the recent drought by local governments or other entities and were transferred to Seqwater upon completion.

These groundwater bore fields service the WGM exclusively.

[12] A dam for these purposes means a 'referable' dam as per section 341 of the *Water Supply (Safety and Reliability) Act 2008*. A referable dam is over 8m in height and meets certain thresholds in terms of storage capacity in mega litres (ML). Weirs are infrastructure, generally smaller than dams in SEQ, which allow water to flow over the crest. Off-stream storages and lagoons are generally bodies of still freshwater that are smaller than referable dams.

2.4 Unregulated assets and services

Seqwater also owns a number of unregulated assets as per below.

240 Margaret Street premises

Seqwater owns premises at 240 Margaret St, Brisbane, which it currently occupies along with other tenants.[13]

Hydroelectricity generation plants

Seqwater also owns a small hydroelectric generation plant at Somerset Dam, and a larger hydroelectric generation plant at Wivenhoe. The Wivenhoe Dam plant is operated by Stanwell Corporation under a Build-Own-Operate-Transfer (BOOT) arrangement.

Seqwater also owns a small hydroelectric generation plant at Landers Shute WTP, using water from Baroon Pocket Dam released through a turbine before being supplied into the treatment plant. The primary purpose of this hydroelectric plant is to provide power to run the treatment plant itself, reducing the need to source energy externally. Hence, this hydroelectric plant is essentially considered part of the regulated assets servicing the WGM and is excluded from the list of unregulated assets.

Water Access Entitlements

Seqwater holds 3,000ML of medium priority WAE in the Mary Valley WSS for trading purposes.[14]

The revenues from these other assets and irrigation services are very minor compared to Seqwater's revenues from grid service charges.

Seqwater proposes these WAE attract the same costs as other medium priority WAE in the scheme.

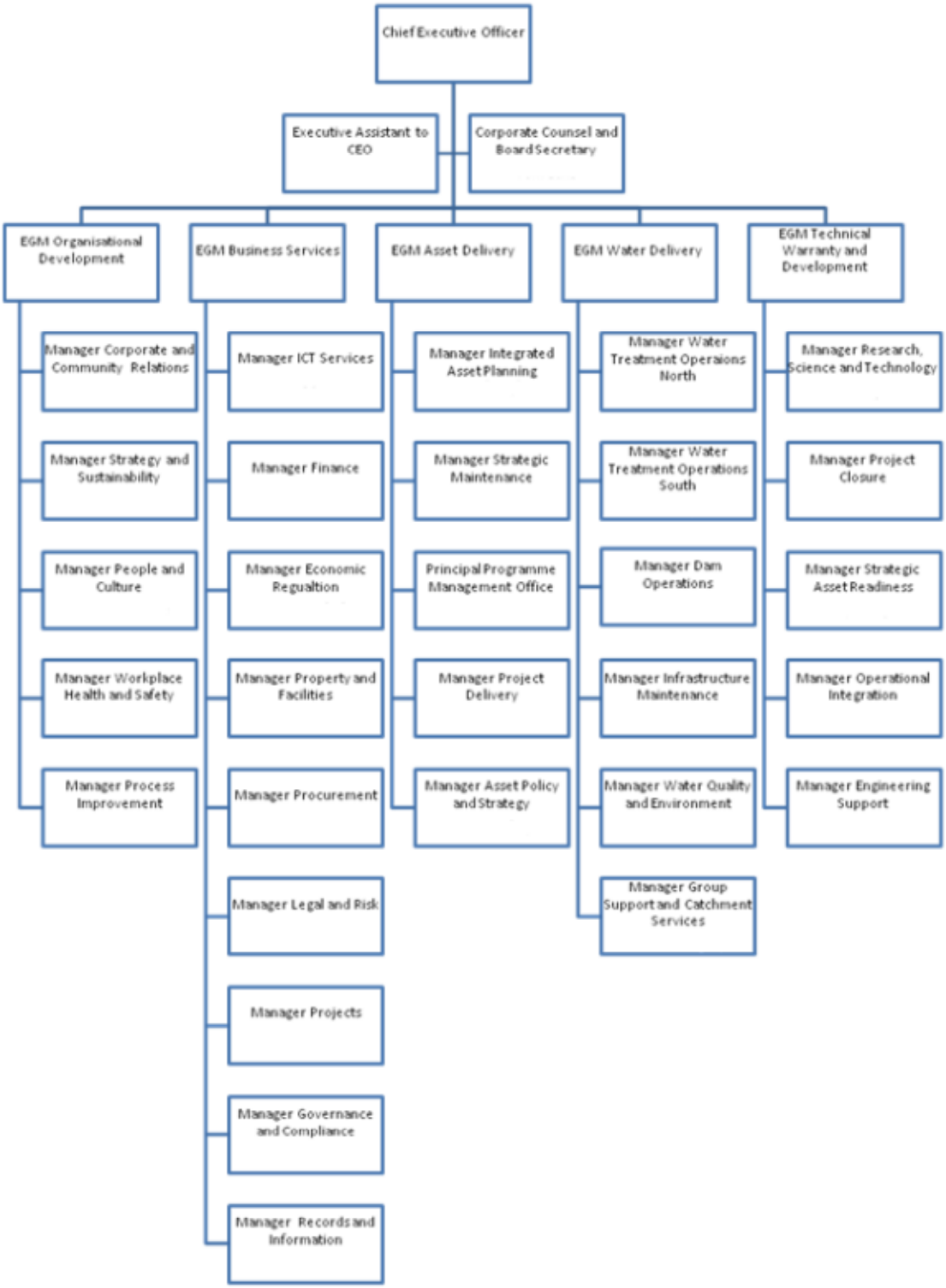
2.5 Organisational structure

A summary of the Seqwater organisational structure, as at April 2012, is set out in Figure 2.2 below.

[13] The market rent from this building is included in the non-direct costs.

[14] In addition to WAE held for supply-related purposes such as amenities or distribution losses.

Figure 2.2 - Seqwater organisational structure as at April 2012



A summary on the role and functions of Seqwater's various teams, as at April 2012, are provided at Attachment 1.

2.5 Future merger

The Queensland Government has announced that Seqwater, LinkWater and the WGM will merge prior to the commencement of the 2013-14 regulator period.[15] This new entity will have a different cost structure to Seqwater and a broader portfolio of assets.

Seqwater has not sought to forecast the costs that might exist following this merger nor predict the impact on irrigation lower bound costs and prices, as there is insufficient information to make such an assessment at this time.

Seqwater expects this is a matter that will be considered as the merger process continues, and as the QCA finalises its recommendations to Government.

[15] Refer to http://statements.cabinet.qld.gov.au/mms/StatementDisplaySingle.aspx?id=79640

Chapter 3 - Overview of water supply schemes

Seqwater was transferred six of the seven WSS from SunWater, as well as the Morton Vale Pipeline. The Central Brisbane River WSS was transferred from SEQ Water Corporation.

The infrastructure relevant to each WSS is set out in the ROP or IROL for each WSS. In general, this infrastructure has been used as the basis for calculating the lower bound costs. However, Seqwater has made certain assumptions about the scope of assets to be included and in some cases proposes to exclude certain storages from the lower bound cost base. This is discussed below, for each WSS.

Water treatment plants providing drinking water for recreation are also included in the cost base for lower bound pricing, consistent with the terms of the Referral Notice that requires efficient recreation management costs to be included.[16]

In most schemes, the WAE have been formalised through the ROP process. However, this has not occurred in all cases. Irrigation prices also exist in some, but not all WSS. This is discussed below, with specific issues for pricing noted in relevant schemes.

3.1 Cedar Pocket WSS

Infrastructure included in the lower bound cost base

Cedar Pocket Dam is the only storage in this scheme.

Table 3-1. Storage assets included in the Cedar Pocket WSS

Asset	Included for irrigation lower bound costs
Cedar Pocket Dam	✓

Water Access Entitlements

The Mary Valley ROP sets out the WAE on issue in the scheme. There is 495ML of medium priority WAE, which is entirely related to irrigation supplies.

Table 3-2. Cedar Pocket WSS – WAE issued

WAE Priority Group	Nominal volume (ML)
High	0
Medium	495
TOTAL	**495**

[16] Note that the forecast renewals expenditure has not captured renewals expenditure for treatment plants used for recreation, although the intent is to do so as and when this expenditure occurs, through the ARR accounts. Refer Chapter 6.

Pricing and CSO

Prices were set under the 2006 price review. Prices at the time were found to be below the lower bound level of cost recovery, and a price path was implemented with a real increase of $10/ML applying across the 5-year period (i.e. an average $2/ML per annum increase). Prices were increased by the Consumer Price (CPI) for 2011-12 and are expected to increase by CPI in 2012-13.

A CSO has been paid to cover the shortfall in recovery between irrigation prices and lower bound costs. The CSO for 2011-12 is $37,000. The table below shows the history of prices.

A price cap was adopted for the scheme.

Table 3-3. Cedar Pocket WSS – irrigation prices

Year	Part A $/ML	Part B $/ML
2006-07	8.20	8.78
2007-08	9.72	10.41
2008-09	11.52	12.34
2009-10	13.27	14.21
2010-11	14.94	16.01
2011-12	15.48	16.59
2012-13	15.68	16.81

A minimum annual charge also applies, at $260 per customer, which is the same fee as previously applied by SunWater, increased by CPI.[17] Annual revenue from the minimum charge has been in the order of $300.[18]

The attached NSP provides more detailed information about the scheme.

3.2 Central Brisbane River WSS

Infrastructure included in the lower bound cost base

The Referral Notice requires the QCA to set prices for the Central Brisbane River WSS. Seqwater has assumed that this is to include the assets contained in the Stanley River WSS (Somerset Dam), on the basis that that these two WSSs are managed together. For example, the

[17] This charge only applies where a customer's annual invoices are less than the minimum, in which case an additional charge to the minimum applies.

[18] This revenue is the difference between Part A and Part B invoiced amounts, and the minimum charge amount.

storage volume of Wivenhoe Dam and Somerset Dam are included in the water sharing rules for medium priority WAE in the Moreton ROP.[19]

However, Seqwater has excluded the costs of Mt Crosby Weir on the basis that this storage is not included in the water sharing rules for the scheme, and essentially provides a pumping pool for the Mt Crosby Water Treatment Plant.[20] The table below provides a summary of the infrastructure included.

Table 3-4. Storage assets included in Lower Bound costs for the Central Brisbane River WSS

Asset	Included for irrigation lower bound costs
Somerset Dam (Stanley River WSS)	✓
Wivenhoe Dam (Central Brisbane River WSS)	✓
Mt Crosby Weir	X

Other related infrastructure, including stream gauges, have also been included in the cost base, along with the Somerset, Kirkleigh and Wivenhoe water treatment plant that provide drinking water to recreation users.

Irrigation users are not currently metered, but a program for metering is to be implemented (refer below).

Water Access Entitlements

The Moreton ROP sets out the WAE issued in the scheme. The table below provides a summary.

Table 3-5. Central Brisbane River WSS – WAE issued

WAE Priority Group	Nominal volume (ML)
High	279,000
Medium	7,041
TOTAL	**286,041**

The WGM holds 278,725ML of the high priority WAE, while Seqwater holds 25ML which, together with 150ML of medium priority WAE, is used for amenities at the dams.[21] The Glamorgan Vale Water Board which is a customer of the WGM, holds 250ML of high priority water allocation.

[19] Refer to section 77 of the Moreton ROP.

[20] Refer also to section 77 of the Moreton ROP.

[21] The 150ML is not part of the dam amenity allocation, and can only be used downstream of the dam wall.

Nearly all medium priority is held by irrigators, with some minor amounts held by Ipswich Regional Council (65ML) and the Lowood and District Golf Club (40ML).

The WGM's WAE is mostly used to supply bulk drinking water to Distribution-Retailers. However, the WGM also uses part of its WAE to supply its own irrigation customers, under separate contractual arrangements (refer to the box below). Seqwater has no contractual relationship with these irrigators. The Referral Notice relates to Seqwater's irrigation charges, and does not contemplate charges between the WGM and its irrigation customers. Accordingly, this submission only relates to irrigators who have a contract with Seqwater.

WGM supplies to irrigators

Prior to the recent institutional and water planning reforms in SEQ, a series of arrangements were in place for the supply of water from Wivenhoe Dam. In essence, SEQWater Corporation and DERM were both involved in managing water diversions by irrigators, with:

- DERM managing licenses to Central Brisbane irrigators, with a notional total allowance of 7,000ML; and
- SEQWater Corporation contracting for the supply of water over and above this 7,000ML with a separate group of irrigators. SEQWater Corporation supplied these other irrigators under its own water access entitlement, and set separate prices. These irrigators are referred to as 'contracted irrigators' below.

The above arrangements changed with the 2008 institutional reforms, where the WGM was effectively granted the water entitlement previously held by SEQWater Corporation. In turn, this meant that the WGM was responsible for supplying 'contracted irrigators' as it held the underlying water entitlement. Accordingly, the contracts for SEQWater Corporation irrigators were assigned from SEQWater Corporation to the WGM.

Pricing

Current prices

No charges currently apply for Seqwater's irrigation customers in the Central Brisbane River WSS. This was also the case before Seqwater took ownership of the scheme. This issue is discussed further in Chapter 5 which deals with the pricing framework.

Meter installation costs

Central Brisbane River irrigators have not been metered. Seqwater intends to implement a program to ensure all customers are metered, in order to measure water use against customer

entitlements. The Standard Supply Contract requires that customer works used to divert water are metered, and that the cost of installing the meter is to be met by the Customer.[22]

Accordingly, the cost of meter installation is not included in the expenditure forecasts. However, the ongoing costs of reading meters, once installed, have been included in the expenditure forecasts along with the cost of repairs, maintenance and replacements of meters.[23]

3.3 Central Lockyer WSS

Infrastructure included in the lower bound cost base

The Central Lockyer WSS comprises a range of storage assets which are all relevant to the supply of water to irrigators.

Table 3-6. Storage assets included in Lower Bound costs for the Central Lockyer WSS

Asset	Included for irrigation lower bound costs
Clarendon Dam	✓
Bill Gunn Dam	✓
Kentville Weir	✓
Jordon Weir (I &II)	✓
Wilson Weir	✓
Clarendon Weir	✓
Showgrounds Weir	✓
Crowley Vale Weir	✓
Glenore Grove	✓
Laidley Creek Diversion Weir	✓

The infrastructure also includes pump stations associated with the above dams (which are effectively off stream storages), diversion channels, gauging stations and meters.

Water Access Entitlements

A ROP has yet to be established for the WSS, and instead WAE (which are called interim water allocations) are specified in an IROL issued to Seqwater.[24]

In this IROL, DERM has specified a nominal volume at an individual level in relation to only 579ML, represented by:

[22] Refer Section 13.1(a) of the Standard Supply Contract.

[23] Refer Section 5(a) of the Standard Supply Contract.

[24] Refer to http://www.derm.qld.gov.au/water/management/pdf/central_lockyer.pdf

- 395ML of Risk A WAE held by the Laidley Golf Club (60ML), the Crowley Vale Water Board (325ML) and non-riparian stock and domestic users (10ML); and
- 184ML of high priority WAE held by Seqwater for distribution losses in the Morton Vale Pipeline.

A further 3,507ML of medium priority WAE has been attributed to users on the Morton Vale Pipeline, and individual volumes are specified in contracts. However, the sum total of the contracted volume is 3,470ML.

The balance of WAE in the scheme has not been assigned to individual users. This balance largely relates to irrigation users in the scheme. The IROL specifies the following:

- 3,115ML of Risk A and Risk B surface water WAE. The IROL states these are expected to be the same in terms of supply reliability;
- 9,335ML of medium priority groundwater WAE.

The IROL states that further work (a Central Lockyer Allocation Project) is to occur to determine how this WAE is to be assigned among individuals. The IROL also states that the maximum Risk A and Risk B to be issued as a result of this project will be 3,510ML. The maximum medium priority WAE to be ultimately issued is 9,340ML. For the purpose of pricing, the volumes that Seqwater is obligated to supply under the IROL, rather than the maximums that may emerge from the review, have been applied, and are set out in the table below.

Table 3-7. Central Lockyer WSS – WAE

WAE Priority Group	Nominal volume (ML)
High	184
TOTAL High	**184**
Risk A assigned to individuals	395
Medium assigned to individuals (via contract, Morton Vale Pipeline)	3,470
Medium unassigned to individuals (groundwater)	9,335
Risk A and Risk B unassigned to individuals (surface water)	3,115
TOTAL Medium – Risk A – Risk B	**16,315**
TOTAL ALL WAE	**16,499**

Risk A, Risk B and medium priority are considered equivalent for pricing purposes. This is consistent with past practice. As indicated above, these WAE total 16,315, of which:

- 12,450ML is yet to be assigned to individuals; and
- 3,865ML has been assigned.

The absence of WAE at an individual customer level has implications for pricing and tariff design. This is discussed, in part, in terms of the current prices below.

Pricing and CSO

Prices were set under the 2006 price review. Prices at the time were found to be below the lower bound level of cost recovery, and a price path was implemented with a real increase of $10/ML applying across the 5-year period (i.e.an average $2/ML per annum increase). Prices were increased by CPI for the 2011-12 period and are expected to increase by CPI in 2012-13.

A CSO has been paid for the shortfall in recovery of lower bound costs. The CSO for 2011-12 is $271,000 which is equivalent to $16/ML.

A price cap was adopted for the scheme.

The prices were set under the two-part tariff regime that applied at the time. However, the fixed (Part A) charge was only to apply where and when WAE were specified at an individual level. A footnote to the tariff table in the Final Report stated:[25]

> *The Part A charge is not payable until formal water entitlements are granted to the irrigators. The Central Lockyer surface and groundwater irrigators do not currently have any formal irrigation water entitlements against which a Part A charge could be applied.*

As indicated above, DERM is yet to formalise WAE for individuals in the scheme. This has meant that the Part A charge has not been applied.[26]

Seqwater has not recovered the expected revenue for the fixed charge, and the CSO has not been adjusted to reflect this under-recovery. Accordingly, Seqwater has foregone around $152,000 in 2011-12 alone because of the delay in establishing WAE.

The table below shows the history of prices.

[25] SunWater (2006b). SunWater Irrigation Price Paths 2006-07 to 2010-11. September. p39.

[26] The Part A charge as part of the bundled Morton Vale Tariff has been applied, as volumes had been specified contractually at the individual level.

Table 3-8. Central Lockyer WSS – irrigation prices

Year	Fixed $/ML (Not applied)	Volumetric $/ML
2006-07	0.00	27.36
2007-08	2.92	28.16
2008-09	5.84	29.51
2009-10	8.87	30.44
2010-11	11.79	31.35
2011-12	12.21	32.48
2012-13	12.37	32.90

A minimum annual charge also applies, at $258 per customer, which is the same fee as previously applied by SunWater, increased by CPI. Annual revenue from the minimum charge has been in the order of $20,000.

The attached NSP provides more detailed information about the scheme.

3.4 Logan River WSS

Infrastructure included in the lower bound cost base

The Logan River WSS comprises a range of dams and weirs. Some storages were recently constructed in accordance with the *Water Amendment Regulation (No 6) 2006*, namely Wyaralong Dam, Bromelton Off stream Storage and Cedar Grove Weir.

Bromelton Off stream Storage and Cedar Grove Weir are included in the Logan River ROP, and their storage is included as usable volume in the water sharing rules for the scheme.[27]

It is understood an amendment to the ROP is also being made, where it is proposed to incorporate Wyaralong Dam into the scheme and include the dam's storage in the water sharing rules.[28]

However, Seqwater propose that these assets (Wyaralong Dam, Cedar Grove Weir and Bromelton Off stream Storage) and the additional WAE arising from them are excluded for irrigation lower bound pricing, and instead 100% of the cost of these assets are recovered under Grid Service Charges. Seqwater's rationale is as follows:

[27] Refer to Attachment 5, Table 7.

[28] Department of Environment and Resource Management (2011). Logan Basin. Draft Resource Operations Plan: Amendment to include Wyaralong Dam.

- these storages were constructed specifically for the purpose of supplying water to secure essential (urban) supplies in SEQ. Indeed the *Water Amendment Regulation (No 6) 2006* states, in its preamble: "The current drought in South-East Queensland is the worst on record. To respond to the drought, powers under the *Water Act 2000* are being used to implement a strategy to secure the essential water supply needs of the region";
- irrigators have not enjoyed an increase in nominal volumes arising from the construction of these storages. That is, the nominal volume of irrigation WAE were unaffected from the construction of these storages; and
- irrigators (as holders of medium priority WAE) did not benefit in terms of increased reliability from these storages. This is evidenced by the fact there was no change to the water allocation security objective (WASO) for medium priority in the original Water Resource Plan (WRP)[29] compared to the amended WRP made to incorporate these new storages (made 18 December, 2009).[30]

The table below summarises the storage infrastructure to be included.

Table 3-9. Storage assets included in Lower Bound costs for the Logan River WSS

Asset	Included for irrigation lower bound costs
Maroon Dam	✓
Wyaralong Dam	X
Bromelton Weir	✓
South Maclean Weir	✓
Cedar Grove Weir	X
Bromelton Off stream Storage	X

Other related infrastructure, including stream gauges, have also been included in the cost base, along with the Maroon Dam water treatment plant that provides drinking water to recreation users.

Water Access Entitlements

The Logan Basin ROP sets out the WAE issued in the scheme. The table below provides a summary.

[29] Originally made in March 2007. Refer to http://www.legislation.qld.gov.au/LEGISLTN/SLS/2007/07SL025.pdf

[30] Made in December, 2009. Refer to http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/W/WatResLBP07.pdf

Table 3-10. Logan River WSS – WAE issued

WAE Priority Group	Nominal volume (ML)
High	9,856.0
Medium	13,554.5
TOTAL	**23,410.5**

Irrigators hold medium priority WAE, while the WGM and other industrial users hold high priority WAE.

Pricing and CSO

Prices were set under the SunWater 2006 price review. In this scheme, the prices that existed at the time were found to recover the irrigation share of lower bound costs. As a result, no CSO applied and prices were indexed at CPI annually.

A price cap was adopted for the scheme.

The table below shows the history of prices.

Table 3-11. Logan River WSS – irrigation prices

Year	Fixed $/ML	Volumetric $/ML
2006-07	14.56	23.22
2007-08	14.96	23.90
2008-09	15.68	25.05
2009-10	16.19	25.84
2010-11	16.67	26.61
2011-12	17.27	27.57
2012-13	17.49	27.93

A minimum charge also applies, at $258 per customer, which is the same fee as previously applied by SunWater, increased by CPI. Annual revenue from the minimum charge has been in the order of $4,000. [31]

The attached NSP provides more detailed information.

[31] This revenue is the difference between Part A and Part B invoiced amounts, and the minimum charge amount.

3.5 Lower Lockyer WSS

Infrastructure included in the lower bound cost base

The Lower Lockyer WSS comprises a range of storage assets which are all relevant to the supply of water to irrigators.

Table 3-12. Storage assets included in Lower Bound costs for the Lower Lockyer WSS

Asset	Included for irrigation lower bound costs
Atkinson Dam	✓
Buaraba Creek Diversion Weir	✓
Brightview Weir	✓
Sippels Weir	✓
Potters Weir	✓
O'Reillys Weir	✓

The infrastructure also includes diversion channels, pipelines and pump stations associated with the above storages, along with gauging stations and meters and a water treatment plant servicing recreation areas at Atkinson Dam.

Water Access Entitlements

A ROP has yet to be established for the scheme, and instead WAE (which are called interim water allocations) are specified in an IROL issued to Seqwater.[32]

A total of 12,778ML of medium priority WAE exists in the scheme. There is no high priority.

Of the 12,778ML, Seqwater holds 1,500ML of medium priority distribution loss entitlement which is an allowance for losses in various channels and pipelines in the scheme. Seqwater does not consider that a separate 'distribution system' exists within the scheme, and has not nominated a separate tariff group. This is consistent with past practice. This means that tariffs need to be set excluding this 1,500ML of distribution loss, with costs assigned across the residual WAE held by users (11,278ML).[33] This is discussed in Chapter 5.

The table below summarises the WAE in the scheme.

[32] Refer to http://www.derm.qld.gov.au/water/management/pdf/lower_lockyer.pdf

[33] Compared to 11,196ML used in the 2006 price review. Refer to SunWater (2006a), Statewide Irrigation Pricing Working Group-Tier 1 Report. p54

Table 3-13. Lower Lockyer WSS – WAE issued

WAE Priority Group	Nominal volume (ML)
High	0
Medium	12,778
TOTAL	**12,778**

Note: includes 1,500ML of distribution loss WAE held by Seqwater. The residual, 11,278, is proposed as the basis for tariff setting.

Pricing and CSO

Prices were set under the 2006 price review. Prices at the time were found to be below the lower bound level of cost recovery, and a price path was implemented with a real increase of $10/ML applying across the 5-year period (i.e. an average $2/ML per annum increase). Prices were increased by CPI in 2011-12 and will be increased at CPI in 2012-13.

A CSO has been paid for the shortfall in recovery of lower bound costs. The CSO for 2011-12 is $547,000 equivalent to $48/ML.

A price cap was adopted for the scheme.

The table below shows the history of prices.

Table 3-14. Lower Lockyer WSS – irrigation prices

Year	Part A $/ML	Part B $/ML
2006-07	15.88	19.41
2007-08	17.52	21.43
2008-09	19.60	24.00
2009-10	21.50	26.32
2010-11	23.33	28.57
2011-12	24.17	29.60
2012-13	24.48	29.98

A minimum charge also applies, at $258 per customer, which is the same fee as previously applied by SunWater, increased by CPI. Annual revenue from the minimum charge has been in the order of $3,000. [34]

The attached NSP provides more detailed information.

[34] This revenue is the difference between Part A and Part B invoiced amounts, and the minimum charge amount.

3.6 Mary Valley WSS

The Mary Valley WSS involves releases from Borumba Dam to the Mary River, and also diversions from the Mary River to Pie Creek. Pie Creek is a supplemented stream, as opposed to a separate distribution system.[35]

A separate tariff group is to continue to apply for Pie Creek, and hence its details are listed separately below.

Infrastructure included in the lower bound cost base

The table below sets out the infrastructure relevant to the scheme and irrigation pricing. It also nominates the assets that are relevant to various tariff groups. These tariff groups are discussed in Chapter 5.

Table 3-15. Storage assets included in the Mary Valley WSS and Pie Creek tariff group

Asset	Included in lower bound costs – Mary Valley tariff group	Included in lower bound costs – Pie Creek tariff group
Borumba Dam	✓	✓
Imbil Weir	✓	✓
Pie Creek Diversion Channel	X	✓

The infrastructure also includes diversion channels and pump stations associated with the above storages, along with gauging stations/measuring weirs, and meters, and a water treatment plant servicing recreation areas at Borumba Dam.

Water Access Entitlements

The Mary Basin ROP sets out the WAE issued in the scheme, which total 21,829ML of medium priority WAE (of which 835ML is located in Pie Creek), and 10,264ML of high priority WAE.

The table below provides a summary.

Table 3-16. Mary Valley WSS – WAE issued

WAE Priority Group	Nominal volume
High	10,264
Medium	21,829
TOTAL	**32,093**

[35] For example, the Mary Basin ROP classifies Pie Creek as a separate watercourse for storage and distribution (p77).

The WGM holds the majority of high priority WAE (6,500ML), along with Gympie Regional Council (3,254ML).

Most of the medium priority WAE is held by irrigators. Seqwater owns 3,000ML in its own right, which it trades.[36]

The table below shows the WAE issued in Pie Creek to users. Note these WAE are a subset of the WAE above, and exclude the 426ML of medium priority WAE and 60ML of high priority WAE distribution loss held by Seqwater in Pie Creek.

Table 3-17. Pie Creek system – WAE issued (exclusive of losses)

WAE Priority Group	Nominal volume (ML)
High	0
Medium	835
TOTAL	**835**

All WAE are held by irrigators.

Pricing and CSO

Prices were set under the 2006 price review. Prices at the time were found to be below the lower bound level of cost recovery, and a price path was implemented with a real increase of $10/ML applying across the 5-year period (i.e. an average $2/ML per annum increase) for Pie Creek. Prices for the Mary Valley tariff group were to reach the lower bound in 2009-10, and the CSO ended at this time. Prices have since been indexed at CPI.

In 2011-12, the CSO for Pie Creek is $185,000 equivalent to $221/ML.

A price cap was adopted for the scheme.

The table below shows the history of prices for the Mary Valley and Pie Creek tariff groups.

[36] Seqwater bears the costs associated with this WAE.

Table 3-18. Mary Valley WSS – irrigation prices

Year	Part A $/ML	Part B $/ML
2006-07	10.44	6.53
2007-08	10.76	6.72
2008-09	12.68	7.92
2009-10	14.84	9.27
2010-11	17.06	10.66
2011-12	17.67	11.04
2012-13	17.90	11.18

Table 3-19. Pie Creek system – irrigation prices

Year	Part A $/ML	Part B $/ML
2006-07	29.64	42.36
2007-08	31.60	45.15
2008-09	34.28	48.96
2009-10	36.52	52.18
2010-11	38.71	55.30
2011-12	40.10	57.29
2012-13	40.62	58.03

A minimum charge also applies, at $525 per customer at Pie Creek, and $260 per customer for Mary Valley. These are the same fees that were previously applied by SunWater, increased by CPI. Annual revenue from the minimum charge has been in the order of $18,000 across both tariff groups.[37]

The attached NSP provides more detailed information.

3.7 Warrill Valley WSS

Infrastructure included in the lower bound cost base

The scheme involves a dam and series of weirs. All assets are relevant for irrigation lower bound costs.

[37] This revenue is the difference between Part A and Part B invoiced amounts, and the minimum charge amount.

Table 3-20. Storage assets included in the Warrill Valley WSS

Asset	Included for irrigation lower bound costs
Moogerah Dam	✓
Churchbank Weir	✓
Warroolaba Creek Diversion Weir	✓
Upper Warrill Diversion Weir	✓
Kents Lagoon Diversion Weir	✓
Aratula Weir	✓
Warrill Creek Diversion Weir	✓
West Branch Warrill Diversion Weir	✓
Railway Weir	✓

The infrastructure also includes diversion channels and pump stations associated with the above storages, along with gauging stations and meters and a water treatment plant servicing recreation areas at Moogerah Dam.

Water Access Entitlements

A ROP is yet to be established for the scheme, and instead WAE (which are called interim water allocations) are specified in an IROL issued to Seqwater.[38]

A total of 24,250ML of medium priority WAE exists in the scheme, along with 890ML of High-A priority, and 8,560ML of High-B priority WAE.

Of the 24,250ML of medium priority, Seqwater holds 3,714ML of distribution loss WAE, which is an allowance for losses in various channels, pipelines and supplemented watercourses in the scheme. Seqwater does not consider that a separate 'distribution system' exists within the scheme, and has not nominated a separate tariff group. This is consistent with past practice. This means that tariffs need to be set excluding this 3,714ML of distribution loss, with costs assigned across the residual WAE medium priority held by users (20,536ML).[39] This is discussed in Chapter 5.

The WGM holds 9,140ML of the high priority WAE, while Seqwater holds 56ML used for amenities.

[38] Refer to http://www.derm.qld.gov.au/water/management/pdf/warrill_valley.pdf

[39] Compared to 20,503ML used in the 2006 price review. Refer to SunWater (2006b.Irrigation Price Paths 2006-07 to 2010-11 - Final Report. September p91.

Table 3-21. Warrill Valley WSS – WAE issued

WAE Priority Group	Nominal volume (ML)
High – A	890
High – B	8,560
Medium	24,250
TOTAL	**33,700**

Note: includes 3,714ML of medium priority distribution loss WAE held by Seqwater. The residual medium priority of 20,536ML is proposed as the basis for tariff setting.

Pricing and CSO

Prices were set under the SunWater 2006 price review. In this scheme, the prices that existed at the time were found to recover the irrigation lower bound costs. As a result, no CSO applied and prices were indexed at CPI annually.

A price cap was adopted for the scheme.

The table below shows the history of prices.

Table 3-22. Warrill Valley WSS – irrigation prices

Year	Part A $/ML	Part B $/ML
2006-07	drought tariff	drought tariff
2007-08	16.24	19.14
2008-09	17.00	20.06
2009-10	17.54	20.69
2010-11	18.06	21.31
2011-12	18.71	22.08
2012-13	18.95	22.37

A minimum charge also applies, at $258 per customer, which is the same fee as previously applied by SunWater, increased by CPI. Annual revenue from the minimum charge has been in the order of $7,000. [40]

A 'drought tariff' was adopted for this scheme, at the time of the 2006 price review. This involved a temporary reduction in the Part A charge during periods of low or no water availability and a corresponding higher Part A charge during periods of high water availability. Part A charges were

[40] This revenue is the difference between Part A and Part B invoiced amounts, and the minimum charge amount.

to be increased when water availability is high to either recover reductions in the Part A charges that have been made during periods of low water availability or to establish a balance for the scheme to fund any reduction in Part A charges into the future when water availability is low.[41]

The drought tariff was applied to the Warrill Valley WSS for a period of time during 2006-07. Seqwater understands the associated under-recovery of Part A charges was recouped by SunWater prior to the scheme being transferred to Seqwater.

The attached NSP provides more detailed information.

3.8 Morton Vale Pipeline Distribution System

Infrastructure included in the lower bound cost base

The Morton Vale Pipeline is a gravity pipeline taking water from Lake Clarendon in the Central Lockyer WSS.

Table 3-23. Distribution assets included in the Morton Vale Pipeline system

Asset	Included for irrigation lower bound costs
Morton Vale Pipeline	✓

The infrastructure also includes valves, meters and other items relating to the pipeline itself.

Water Access Entitlements

As indicated above, some 3,507ML of WAE has been attributed to users on the Morton Vale Pipeline, and individual volumes are specified in customer contracts. The actual contracted volume is 3,470ML.

Seqwater also holds 184ML of high priority WAE for distribution losses.

Pricing and CSO

Prices were set under the SunWater 2006 price review. These were bundled prices, including the bulk water costs of the Central Lockyer WSS as well as the costs of the distribution system.

Prices at the time were found to be below the lower bound level of cost recovery, and a price path was implemented with a real increase of $10/ML applying across the 5-year period (i.e. an average $2/ML per annum increase). Prices were increased by CPI in 2011-12 and will be increased by CPI in 2012-13.

[41] Further details on the application of drought tariffs are included in the SunWater (2006b) Irrigation Price Paths 2006-07 to 2010-11 Final Report. September.

A CSO has been paid for the shortfall in recovery of lower bound costs. The CSO for 2011-12 is $328,000 equivalent to $96/ML.

A price cap was adopted for the scheme.

The table below shows the history of prices.

Table 3-24. Morton Vale Pipeline – irrigation prices

Year	Part A $/ML	Part B $/ML
2006-07	drought tariff	drought tariff
2007-08	15.96	27.39
2008-09	17.76	30.47
2009-10	19.38	33.23
2010-11	20.94	35.90
2011-12	21.69	37.19
2012-13	21.97	37.67

A minimum charge also applies, at $516 per customer, which is the same fee as previously applied by SunWater, increased by CPI. Annual revenue from the minimum charge has been in the order of $3,000.[42]

The drought tariff was applied to the Morton Vale section of the Central Lockyer WSS for a period of time during 2006-07. Seqwater understands the associated under-recovery of Part A charges was recouped prior to the scheme being transferred to Seqwater.

Customer contracts provide for a charge to 'contribute to the capital cost of the distribution network' (a capital charge), in addition to annual water charges prescribed by regulation.[43] This charge continues until 2025, indexed at CPI. This charge has been waived by Seqwater to date, and future decisions about the application of this charge have not been made.

Seqwater considers that this capital charge is outside the scope of this review, as the QCA is to recommend prices that recover lower bound costs and exclude any rate of return on existing rural irrigation assets. This does not preclude Seqwater enforcing existing contractual rights to levy the capital charge in the future by Seqwater, should it choose to do so.

Moreover, the capital charge is in addition to lower bound costs, and in accordance with the contract, is set to recover the capital cost of the pipeline. Prices set by the QCA to recover lower

[42] This revenue is the difference between Part A and Part B invoiced amounts, and the minimum charge amount.

[43] Seqwater can provide copies of contracts to the QCA on a confidential basis, if required.

bound costs would be separate to and in addition to this capital cost – that is, there should be no double-recovery.[44]

The attached NSP provides more detailed information.

[44] This is based on a reading of the contract, which only refers to capital costs and does not contemplate the capital charge recovering any ongoing renewals or operating costs – instead it appears such costs were to be recovered through regulated charges.

Chapter 4 - Regulatory framework

The Referral Notice requires the QCA to recommend appropriate regulatory arrangements to manage the risks associated with matters that are outside of Seqwater's control. This chapter examines those matters in the context of a regulatory framework, and in particular the form of regulation (revenue or price cap) and price review mechanisms.

The QCA has already examined the regulatory framework for SunWater, and focussed on volume and cost risks. The context surrounding volume and risk is very similar, if not identical, for Seqwater.

The QCA's recommendations in the SunWater report are therefore extremely relevant to its Seqwater review, and are considered below followed by Seqwater's position on these matters.

4.1 Volume risk

Current situation

As indicated in Chapter 3, a price cap was adopted for the current prices in all ex-SunWater schemes, and consequently Seqwater has borne volume risk under the current regime.

In the Warrill Valley WSS and Morton Vale Pipeline, customers elected to adopt a drought tariff arrangement, which was similar to an unders-and-overs mechanism to deal with supply risk, where prices were reduced in times of shortage and increased to recover the shortfall when water was more abundant. In these schemes, customers have borne volume risk to the extent this arises from severe supply restrictions.

SunWater report

Demand risk

In the SunWater report, the QCA concluded that SunWater is not in a position to manage demand risk, and noted that SunWater does not seek to influence the demand for water as customers, as holders of WAE, are responsible for managing their supply demand balance.

Seqwater operates under the same service framework as SunWater in relation to services to WAE holders, including irrigators. Indeed the arrangements as described by SunWater, [45] and summarised by the QCA in its SunWater report, are largely identical to Seqwater's services to WAE holders generally (with the exception of the WGM where broader service arrangements are in place).

[45] SunWater (2010). Background Paper. QCA Review of Irrigation Prices. Service Framework.

Accordingly, the QCA's conclusions about demand risk for SunWater also apply to Seqwater. That is, Seqwater, like SunWater, cannot manage demand risk and this risk should be managed and borne by WAE holders (irrigators).

Supply risk

The QCA concluded that SunWater could not manage supply risk and this risk should be assigned to customers. The QCA noted that:[46]

> *SunWater cannot influence water availability in the short term in that it cannot influence rainfall or hydrology.*

Seqwater has the same constraints in terms of its ability to manage short-term demand risks associated with its irrigation customers. Other aspects considered by the QCA as relevant to this risk are also identical or similar, for example:

- Seqwater does not develop drought management plans in relation to irrigation supplies under the *Water Supply (Safety and Reliability) Act 2008*; and
- the same contractual terms also apply to Seqwater's irrigation customers[47], which only require Seqwater to provide water to the extent that the customer has rights to take water under their WAE (or via trading other WAE or rights).

The QCA concluded that short-term volume risks should be assigned to customers through a tariff structure that recovers fixed costs through fixed charges and variable costs through volumetric charges.

The QCA also considered long-term volume risks were primarily associated with augmenting current infrastructure or reducing distribution losses to address future water supply needs. The QCA concluded that SunWater did not have any effective means of increasing storage capacity of its own accord, as augmentation of bulk infrastructure was the responsibility of State Government. The same situation applies to Seqwater, as evidenced by the State Government's (through the Queensland Water Commission (QWC)) role in water supply planning in South East Queensland.[48]

The QCA considered that SunWater had some opportunities to increase supply of WAE by reducing its distribution losses, and trading the savings. Seqwater's holdings of distribution losses are very small and, the only 'true' distribution loss is held for the Morton Vale Pipeline, which is 184ML. While in theory the QCA's findings may be applicable to Seqwater, distribution losses, the amount of loss is not material in overall terms or in comparison to SunWater.

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46 QCA (2011). SunWater Irrigation Price Review: 2012-2017- Draft Report. p28.

47 Although this is not discussed explicitly in the contract for Morton Vale customers it is implicit in the terms of that contract which, in the current legislative setting, allows for reductions to supply under the water sharing rules in ROPs.

48 Queensland Water Commission (2010). South East Queensland Water Strategy.

The QCA concluded that long term volume risks should not be the responsibility of SunWater (although SunWater should bear the risk and benefits from revenues associated with reducing distribution losses).

Seqwater's position

Seqwater agrees with the QCA's position that volume risk should be borne by irrigation customers via a tariff structure that recovers all fixed costs through a fixed charge, and costs that vary with demand through volumetric charges (i.e. fully cost-reflective tariff structure).

Accordingly, Seqwater has proposed a tariff structure and calculated prices on the basis of a fixed tariff recovering fixed costs, and a volumetric tariff recovering variable costs.

While this would normally mean a revenue cap is irrelevant (given costs are recovered regardless of demand), special consideration is required in the Central Lockyer WSS as individual WAE (which form the basis of the fixed charge) are yet to be set by DERM. This problem has continued since the current price paths commenced in 2006-07, and there is no indication from DERM that WAE will be set for all individual irrigators prior to the start of the next regulatory period (2013-14 to 2016-2017).

This situation requires some special consideration and modification of the regulatory framework for this scheme. Seqwater proposes that, until such time as WAE are specified, prices for irrigators who do not hold individual WAE in the Central Lockyer are set as an interim volumetric charge. To ensure that Seqwater is not exposed to volume risk, Seqwater propose that a revenue cap arrangement with an ongoing under and overs adjustment apply to these customers. Under this arrangement any under and over recoveries of revenues resulting from actual irrigation water sales differing to forecast irrigation usage levels will be monitored. It is proposed that an adjustment be made at the start of the next price path to correct for any identified under or over recovery of revenues.

When and if WAE are specified, then recommended tariffs based on the structure outlined above would apply from the start of the following year.

Seqwater's position:

In accordance with the SunWater report, volume risk should be borne by customers through a tariff structure where the fixed charge recovers fixed costs, and a volumetric charge that recovers costs that vary with demand.

In the Central Lockyer, where WAE have not been issued, an interim volumetric charge will apply. In order to achieve the same allocation of volume risk, a revenue cap with the use of unders and overs adjustments (where applicable), will need to apply to adjust for actual versus forecast revenues.

4.2 Cost risks

Current situation

Seqwater understands there is no mechanism under the 2006 price review to review prices to account for unforeseen changes in operating costs.

SunWater report

In its SunWater report, the QCA acknowledged that external factors beyond the service provider's control may occur that impact the costs of providing a service. In response, mechanisms are required to recover those costs.

The QCA reviewed several mechanisms that could be implemented to address SunWater's cost risks, and recommended:

- end of period revenue adjustments which would impact on future prices;
- price review triggers allowing for in-period reviews of costs and prices. This mechanism would only be applicable where SunWater was able to demonstrate that the cost changes could not have been reasonably forecast or managed at the time the prices were set; and
- cost-pass through mechanism allowing automatic price adjustments during the regulatory period where the nature of costs can be reasonably foreseen and the subsequent changes are unambiguous (e.g. cost increases resulting from changes in government policy).

In making these recommendations, the QCA acknowledged that impacts from variations in costs in a lower bound cost environment were significant, but was hesitant to recommend within-period reviews unless the costs involved were material.

Seqwater's position

The cost risks relevant to irrigation prices also apply to grid service charges generally. Seqwater notes the QCA's current investigation of 2012-13 grid service charges will include consideration of the review thresholds for cost risks. Assuming the QCA will continue to recommend grid service charges after 2012-13, situations may arise where a single event may have implications for both irrigation prices and grid service charges. It would be preferable to establish common principles and a common process, taking into account the different legislative and decision making processes and timeframes for both pricing regimes.

However, Seqwater acknowledges that irrigation and grid service charges are currently set over different regulatory periods, and it would be difficult to achieve perfect alignment of approaches in practice.

Accordingly, Seqwater generally agrees with the approach recommended in the SunWater report. That is, revenue certainty should be achieved through the use of end-of-period adjustments, price review triggers or cost pass-through mechanisms. Seqwater consider that, as per the SunWater report recommendations, the emphasis of any such adjustments should ensure that Seqwater bears the risk of its controllable costs, while customers bear the risks of uncontrollable costs.

Notwithstanding the above, Seqwater submits that the following cost risks are approved by the QCA on an ex-ante basis for an end of period adjustment:

- electricity pumping costs at off stream storages; and
- operating costs associated with the introduction of national metering standards during the regulatory period.

Off stream storages

The use of off stream storage provides improved reliability of water schemes. Off stream storages allow water to be harvested during periods of heavy flows and returned to reservoirs during low flow periods. The rules for pumping water into these storages are set in each ROP, and require Seqwater to pump water when streamflows reach certain thresholds and until storages are full. These events are difficult to predict and do not occur regularly.

Moreover, the electricity costs associated with pumping flows from off stream storages can be significant. For example, during the recent Queensland floods, streamflows reached threshold levels that required Seqwater to pump water, leading to electricity pumping costs as high as $27,000 a month at the Lake Clarendon off stream storage compared to a monthly average cost of approximately $2,000 in the previous two years.

Given future electricity pumping costs are beyond the control of Seqwater and are highly unpredictable, it is proposed that the QCA allow Seqwater to recoup these costs at the end of the regulatory period.

National metering standards

National standards for water meters have been developed under the National Water Initiative. However the new standards have yet to be implemented in Queensland. Consistent with the Referral Notice to the QCA, capital expenditure (renewals) costs for meter upgrades to meet national metering standards have been excluded from this submission. However, to the extent that national metering standards are introduced during the regulatory period, it is possible that Seqwater will incur additional operating costs. For example, changes to the frequency of meter reads or the need for testing and calibration of meters may impose additional costs.

Seqwater has not included additional costs in its operating cost forecasts for the regulatory period, to accommodate the introduction of metering standards. However, to the extent that the

new standards are introduced and Seqwater incurs additional operating costs in meeting these standards, it is proposed that the QCA permit Seqwater to recover these costs through an end of period adjustment.

Seqwater consider that these costs are beyond its control and their recovery is consistent with the QCA's recommendation for addressing cost risks as outlined in its SunWater report.

Seqwater position:

In accordance with the Referral Notice, Seqwater should not bear cost risks it is not able to manage or control. This includes unforeseen events, as well as costs that are uncertain and difficult to forecast, such as pumping costs for off stream storages. Given irrigation revenues and related costs compared to Seqwater's total regulated business, Seqwater accepts that an end-of-period adjustment for allowed cost risk events is appropriate. Seqwater also proposes an end of period adjustment for the difference between forecast and actual pumping costs for off stream storages and for additional operating costs imposed with the introduction of national metering standards.

Where possible, the processes for reviewing prices should align with the price review mechanism for grid service charges.

Chapter 5 - Pricing framework

The Referral Notice requires the QCA to recommend prices that reflect efficient lower bound costs.

The QCA has already examined the pricing framework for SunWater, and focussed on the need to unbundle bulk and distribution prices, tariff structure, pricing treatment of distribution losses and free water entitlements, and other miscellaneous tariffs applicable to irrigators.

This chapter examines tariff structure, unbundling, and other pricing issues examined by the QCA in its SunWater reportand presents Seqwater's position and summarises the tariff groups nominated in Seqwater's NSPs.

5.1 Tariff structure

A key issue for this and the SunWater review of irrigation prices is the structure of tariffs. Chapter 4 examined this issue from a volume risk perspective. Price signals to irrigation users are another important consideration.

Current situation

A two part tariff structure currently applies for prices in ex-SunWater schemes:

- a fixed charge levied on each ML of WAE held by the irrigator; and
- a volumetric charge levied on each ML of water used.

As set out in Chapter 3, a fixed charge is not applied in the Central Lockyer WSS as WAE are yet to be issued by DERM.

The volumetric and fixed charges were set to recover a set percentage of lower bound costs, regardless of whether those costs were fixed or variable. This meant that the volumetric charge did not signal the marginal costs of taking water. The table below sets out the proportion of revenue to be recovered under each component.

Table 5-1. Current basis for fixed and volumetric prices (%)

Scheme	Tariff Group	Fixed	Volumetric
Central Lockyer	Central Lockyer	37	63
Central Lockyer	Morton Vale	70	30
Lower Lockyer	River	70	30
Logan River	River	53	47
Warrill Valley	Combined Supplemented Regulated Section	61	39
Mary Valley	Mary Valley	80	20
Mary Valley	Pie Creek	70	30
Cedar Pocket	Cedar Pocket Dam	70	30

Source: SunWater (2006b). Refers to Year 5 of the price path.

As set out above, the fixed charge does not apply in the Central Lockyer WSS as WAE have yet to be issued and no prices apply in the Central Brisbane River WSS.

The pricing structure inherited from SunWater schemes included a minimum charge. This charge only applies where a customer's annual invoices are less than the minimum, in which case an additional charge to the minimum applies.

For example, in the Warrill Valley WSS, the Part A charge is currently $18.71/ML and the Part B charge $22.08/ML. The minimum charge is $258. An irrigator with an 8ML WAE, and who used 4ML, would incur Part A and Part B charges for the year of $238. In these circumstances, the minimum charge would apply, at $20.

The total minimum charge revenue has been around $50,000 per annum, which is in addition to Part A and B revenue. The minimum charge and associated revenue in each scheme are described in Chapter 3.

Seqwater also charges transaction fees, such as searches, transfers, leases etc. The revenue from these fees and charges is budgeted at approximately $250,000 for 2012-13 for all schemes. This revenue has been included as an offset in the calculation of lower bound costs.

SunWater report

The QCA supported the ongoing use of two-part tariffs, and re-affirmed the need to change the current basis for the fixed and volumetric charge so they align with the underlying cost structure to not only assign volume risk (as discussed in Chapter 4) but also send efficient price signals:[49]

> *Of particular relevance, the rationale for using a two part tariff is that the volumetric charge should, when set to equal the anticipated costs of using an additional unit of water*

[49] QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. pp 49-50.

> *(the marginal cost), promote informed decisions by users. Customers will irrigate until the marginal benefit of irrigation outweighs SunWater's variable cost…*
>
> *The Authority therefore considers that, in general, aligning the bulk and distribution tariff structure with fixed and volumetric costs will better manage volume risk and send efficient price signals.*

The QCA went on to examine the nature of variable and fixed costs. The QCA concluded variable costs should be defined in terms of costs that can be expected to vary with water usage over the regulatory period.

Seqwater notes that in applying these principles, the QCA accepted recommendations made by Indec about the cost structure in SunWater schemes. In particular, Indec concluded, and the QCA accepted, that variable costs should include costs that could be avoided when demand was extremely low or did not exist at all. Seqwater also notes that SunWater's submission to the draft report disputed this finding and raised various concerns with the approach.

Seqwater position

Seqwater agrees with the findings of the QCA that a cost-reflective two-part tariff structure is appropriate, and that the QCA's recommendations in Chapter 4 of the SunWater report also apply to this review. That is, the volumetric charge should be set to reflect those costs which are expected to vary with water usage over the regulatory period, and the fixed charge should recover the balance of costs.

Under this approach, the fixed and consumption tariffs should together recover lower bound costs. Accordingly, Seqwater proposes that the tariff structure for the regulatory period exclude the minimum charge (with Seqwater ceasing to levy this fee from 1 July 2013) on the basis that the fixed and consumption charges (and any CSO) will recover irrigators' share of lower bound costs regardless. Alternatively, Seqwater could continue to levy the minimum charge and offset the forecast revenue from the irrigation lower bound cost base. On balance, Seqwater considers the best approach is to stop charging the minimum charge on the grounds it is administratively simple to do so, avoids the need to review the basis for a minimum charge, and also avoids the risk of forecasting error for minimum charge revenue over the regulatory period.

Seqwater proposes to continue to charge application fees for certain services and transactions in order to signal to customers there is an administrative cost. However, Seqwater does not propose that the QCA conducts a review of these charges given the relatively small revenue involved, but instead they be maintained at current levels (in real terms), and the revenue from these fees be applied as a revenue offset.

Seqwater's position:

Cost-reflective tariffs should be applied instead of the current approach to achieve the desired allocation of volume risk as well as send efficient price signals, as previously indicated by the QCA.

The minimum charge would not continue on the basis that the fixed and volumetric charges recover all lower bound costs (subject to any price paths and CSOs applying).

Application and other administrative fees should continue at the current fees (indexed at CPI), and applied as a revenue offset to the irrigation lower bound cost base.

5.2 Unbundling

Unbundling refers to the past practice of combining the costs of different services (storage and delivery with distribution) into a single price. This practice provides poor price signals to users, and has been the focus of policy and regulatory reform over recent years.

Current situation

Only one tariff group inherited by Seqwater is bundled – the Morton Vale Pipeline (the pipeline is the only distribution system). That is, the charge is set to recover the costs of the distribution system as well as the customers' share of costs in the Central Lockyer WSS.

The Pie Creek tariff, which is effectively a bulk water charge (as Pie Creek is not a separate distribution system), is also a bundled price that relates to the costs of the Mary Valley WSS, as well as the additional costs of the Pie Creek System.

SunWater report

SunWater proposed to unbundle distribution and bulk tariffs, resulting in distribution system customers paying a discrete set of charges for each service. The QCA accepted this approach, and noted the implications for improved price signals to users:[50]

> *The Authority accepts SunWater's proposal to unbundle bulk and distribution tariffs. In addition to SunWater's reasoning for unbundling, the Authority considers that unbundled tariffs will signal to customers the relevant bulk and distribution system costs that will encourage efficient levels of water use in the bulk and distribution systems.*

The QCA went on to calculate fixed and volumetric tariffs for each distribution and bulk system.

[50] QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. p50.

Seqwater's position

Seqwater proposes that the Morton Vale Pipeline tariff be unbundled so that the charge only reflects the cost of the distribution system. Customers on the pipeline should also pay the bulk water charge for the Central Lockyer WSS.

Seqwater has nominated the Morton Vale Pipeline tariff as an unbundled charge accordingly.

There is also merit in identifying the Pie Creek charge so the separate costs of the Pie Creek system are transparent, although Seqwater maintains that a single tariff should still apply to recover the combined costs.

Seqwater's position:

Prices for the Morton Vale Pipeline should be unbundled into bulk and distribution components, and, to facilitate transparency, the bulk water charge applicable to Pie Creek should be separately identified, although a single tariff should continue to apply.

5.3 Tariff groups

The Referral Notice requires the QCA to adopt tariff groups as proposed in Seqwater's network service plans. Seqwater has nominated the same tariff groups that currently apply in ex-SunWater schemes, as well as a single tariff group for Central Brisbane River WSS. These are the same tariff groups as set out in Table 5-1 above.

Seqwater's position:

The current tariff groups should continue into the next regulatory period.

5.4 Termination fees

Termination fees can apply where a customer terminates access to the distribution network. These fees have been reviewed in large distribution systems in the Murray Darling Basin, and were recently considered by the QCA for SunWater schemes.

As termination fees are only relevant in distribution systems, they only need to be considered for the Morton Vale Pipeline.

Current situation

The contract with Morton Vale Pipeline customers provides for an early termination of the capital charge, calculated as the present value of outstanding payments to 2026 discounted at a nominated interest rate. However, the contract also requires the customer to continue to pay the other annual water charges on an on-going basis.

SunWater report

The QCA considered it appropriate for termination fees to be set at 20 years of fixed distribution costs, discounted to a present value using the approved WACC. Other users would not bear the share of costs met previously by the terminating user.

In reaching this decision, the QCA noted the following:

- SunWater is limited in the extent to which it can effectively manage all the risks involved in attracting additional customers or reducing the fixed costs associated with irrigation schemes; and
- A period of 20 years will allow sufficient time (and provide incentive) for SunWater to rationalise its distribution systems, reduce fixed costs and secure new distribution system customers.

Seqwater's position

Seqwater acknowledges there is a weight of regulatory precedent (including the SunWater report) for calculating termination fees. However, Seqwater's contract with Morton Vale Pipeline customers sets out the terms of early termination. Accordingly, Seqwater (and customers) will be bound by the terms of this contract.

Seqwater's position:

Seqwater notes that regulatory approaches exist for calculating termination fees, and the QCA may make recommendations for termination fees for the Morton Vale Pipeline. However, Seqwater (and customers) will be bound by the terms set out in those contracts and to the extent there is any inconsistency in approach, the contract terms will prevail.

5.5 Distribution losses

Distribution losses are held by the owners of distribution systems for water losses incurred in supplying WAE holders in the network.

Current situation

Seqwater holds 184ML of high priority distribution loss WAE for the Morton Vale Pipeline. However, actual losses incurred under this WAE are likely to be well below the licensed amount. While actual losses are not recorded, apart from the initial loss of pumping the water into the pipeline, there is very little leakage in the system. At present, losses reported to DERM simply reflect the licensed loss of 184ML per year rather than actual losses.

Seqwater also holds WAE that is assigned a purpose 'distribution loss' in other schemes, namely:

- 1,500ML of medium priority in the Lower Lockyer WSS;
- 426ML of medium priority WAE and 60ML high priority WAE in the Pie Creek section of the Mary Valley WSS; and
- 3,714ML of distribution loss WAE in the Warrill Valley WSS.

These distribution losses in the Lower Lockyer and Warrill Valley WSS are not associated with a distribution system (i.e. a channel or pipeline network), but rather are related to losses within watercourses. That is, these losses relate to the provision of bulk water services rather than distribution services.

However, in the Pie Creek section, the losses can be more discretely associated with infrastructure supplying water to Pie Creek.

SunWater report

In its review of SunWater's irrigation prices, the QCA accepted that distribution losses are a valid consideration in establishing the cost of providing distribution services and also acknowledged that the costs associated with distribution loss WAEs should be recovered from distribution system customers.

The QCA also noted customers should not pay for distribution loss WAEs held by SunWater that are considered to be in excess of the entitlements required to meet required actual loss releases. However, the QCA examined the extent to which SunWater could reduce its loss WAE and noted there were some constraints in doing so (e.g. DERM approval). The QCA also made recommendations in respect of future DERM reviews of distribution losses.

Seqwater's position

There are clear similarities between the pricing principles for distribution losses between SunWater various distribution systems and Seqwater's Morton Vale Pipeline. Accordingly, Seqwater accepts that a similar pricing approach will apply.

Seqwater has therefore calculated the lower bound Morton Vale Pipeline tariff incorporating the bulk water costs attributable to the full 184ML of high priority loss WAE. Seqwater notes that, based on past experience, actual losses are likely to be substantially lower.

A similar situation exists in the Pie Creek section of the Mary Valley WSS, where discrete infrastructure and separate tariff group applies. Seqwater therefore proposes to treat distribution loss WAE for Pie Creek as a distribution system.

However, distribution loss WAEs in the Lower Lockyer and Warrill Valley WSSs are not associated with a distribution network or discrete sub-section of a WSS. A single tariff group has been nominated in each of these areas, and hence there is no need to calculate a discrete cost

for losses and include this in a cost base for a separate tariff group (as occurs for distribution systems and for Pie Creek). Rather, these distribution loss WAEs should be removed from the WAE base used to calculate tariffs, including the calculation of the sharing of costs between priority groups (refer Chapter 6 below). This will have the effect of assigning the costs for the WSS among WAE held by users, and spreading the costs of the distribution loss WAEs held by Seqwater proportional to each users' WAE.

The table below sets out the proposed WAE to be adopted for cost sharing and pricing purposes.

Table 5-2. WAE for pricing purposes (excluding WAE loss in bulk water schemes)

Tariff group	WAE for pricing purposes	
	High Priority (ML)	Medium Priority (ML)
Lower Lockyer	-	11,278 (excludes 1,500 loss WAE)
Warrill Valley	890ML (High A) 8,560ML (High B)	20,536 (excludes 3,714 loss WAE)

It appears this approach is consistent with that used in the 2006 price setting process and incorporated into current prices, for example,

- in the Lower Lockyer WSS, 11,196ML was used for setting the current prices, compared to 11,278 in the table above;[51] and
- in the Warrill Valley WSS, 20,503ML medium priority WAE used for setting current prices, compared to 20,536ML above.

Seqwater's position:

In general, prices for users should incorporate the costs relating to distribution loss WAE.

Where discrete systems and separate tariff groups exist, the costs of the distribution loss WAEs should attract bulk water charges, which is then included in the cost base for the distribution system. This applies in the Pie Creek and Morton Vale Pipeline tariff groups.

Where distribution losses are not as easily attributed to a single section and only a single tariff group exists in a WSS, then those losses should be removed from the base for pricing purposes so that costs recovered from the remaining WAE held by users. This applies in the Lower Lockyer and Warrill Valley WSSs.

[51] SunWater (2006b). SunWater Irrigation Price Paths 2006-07 – 2010-11. September. p54.

5.6 Free water allocations

The QCA considered the pricing treatment of WAE previously provided free of charge in its draft report. This issue is relevant to this review of Seqwater's irrigation charges.

Current situation

Seqwater's irrigation customers in the Central Brisbane River WSS currently pay no charges. This situation existed before Seqwater took ownership of the scheme.

When Wivenhoe and Somerset dams were transferred to Seqwater in 2008, no charges were in place for Central Brisbane irrigators. Seqwater understands this was due to past legacy decisions, most recently in 2002 when the Government expressed a policy position in a regulation made under the *Water Act 2000* in 2002.[52] This regulation set the terms and conditions for the water access entitlement granted to SEQWater Corporation, and required SEQWater to make available, free of charge up to 7,000ML a year to supply the licensees already authorised to take water under licenses previously issued by DERM (i.e. the Central Brisbane irrigators).

Seqwater did not apply charges during 2008-09 for a range of reasons, including a lack of a clear contractual relationship and rights to do so.

As set out above, when the ROP for the Central Brisbane River WSS was made in December 2009, a deemed contract applied to the Central Brisbane irrigators under the *Water Act 2000*.[53]

The new deemed contract requires irrigators to pay water charges. These charges can be set and reviewed by law, or otherwise by Seqwater acting reasonably and having regard to the criteria that would be applied by an economic regulator.[54]

This provides a legal mechanism for Seqwater to set charges, or for a regulatory decision to be applied, assuming there is no continuing legal obligation to provide water free of charge.[55]

No charges have been levied since these contracts applied in December 2009.

SunWater report

The QCA considered two scenarios where free water allocations existed: legacy contractual arrangements that prevented SunWater from charging customers, and free water arising from 'compensation' style arrangements that preserved pre-existing rights to water before construction of the scheme.

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52 Water (Transitional) Amendment Regulation (No 1) 2002.

53 http://www.derm.qld.gov.au/water/management/pdf/rols/ssc_central_bris_wss.pdf

54 Refer to clauses 11.2, 11.3 and the definition of Fixed Charge and Consumption Charge.

55 On the basis that Seqwater can be directed in relation to pricing matters, following a QCA investigation.

The QCA concluded that:[56]

(a) *SunWater should continue to meet legacy arrangements as these represent commercially agreed arrangements… In these circumstances, the costs are borne by SunWater in the form of diminished revenues; and*

(b) *for compensation arrangements, the pre-existing rights to free water should be maintained where they are the result of an existing agreement or as part of a current legislative or Government policy.*

For compensation arrangements, the QCA stated that "those customers benefitting from the supplemented supply should pay for the costs of that supply. Neither SunWater nor customers with a continuing right to free water should bear these costs".[57]

Seqwater position

Seqwater consider that the historical practice of allowing licensed irrigators in the Central Brisbane River WSS to divert water free of charge, expired on 7 December 2009, being the day that:

- the Moreton ROP commenced in accordance with the provisions of the *Water Act 2000*; and
- Seqwater became the holder of a Resource Operations Licence (ROL) for the Central Brisbane River WSS.

Upon commencement of the ROP, the irrigators' historical entitlements were converted into the allocations or other entitlement stated in the ROP. The provisions of the *Water Act 2000* then took effect so that the conditions of supply of the allocated water managed under the ROL for the Central Brisbane River WSS were those provided for under a supply scheme contract for the relevant allocation.

The Standard Supply Contract for the Central Brisbane River WSS sets out the terms under which a customer is to pay water charges to Seqwater as the ROL holder.

Seqwater has authority, derived from the contract and Seqwater's general statutory contractual capacity, to impose charges for the water services that are provided to the holders of the water allocations that are managed under the ROL for the Central Brisbane River WSS.

Accordingly, Seqwater has set prices to apply to irrigation customers in the Central Brisbane River WSS.

[56] QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. p72.

[57] QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. p72.

Chapter 6 - Renewals annuity

The Referral Notice requires the QCA to recommend prices that allow Seqwater to recover prudent and efficient expenditure on renewing and rehabilitating existing assets through a renewals annuity.

Seqwater's original submission calculated opening renewals annuity balances on an irrigation only basis and then converted to total scheme (all customer sectors) balances. At that time, Seqwater indicated that it would seek to update the balances based on a more fulsome total scheme approach.

Seqwater has since engaged Indec to produce ARR balances on a total scheme basis adopting a first principles approach based on all customer sector data which does not involve any conversion processes from irrigation only to total scheme balances.

This chapter presents Seqwater's proposed revised opening renewals annuity balances at 1 July, 2013, its future forecasts of renewals expenditure and its proposed renewals annuities for each tariff group.

6.1 Opening Asset Restoration Reserve for 2013-14

The renewals annuity approach requires an accounting system to monitor renewals income and expenditure, to monitor the status of the renewals account or the Asset Restoration Reserve (ARR). This balance can be either positive or negative, and is incorporated into the calculation of the renewals annuity itself. Interest is applied to the balance, at the same rate used to determine the original renewals annuity.

In order to calculate lower bound costs from 2013-14, projected closing ARR balances at 30 June 2013 must be made for each service type (bulk supply and distribution) for each water supply scheme.

To calculate the respective annuity balances, Seqwater engaged Indec who performed the following steps:

- obtained relevant data for the water supply schemes from SunWater dating back to 2001 when the existing annuity balances were established;
- established a closing balance at 30 June 2008 based on the renewals expenditure and income over the period the schemes were owned and managed by SunWater. Indec sought advice and guidance from SunWater to establish these balances;
- calculated a closing balance at 30 June 2011 based on actual renewals expenditure and income since the schemes were transferred to Seqwater;

- forecast a closing balance at 30 June 2013 based on Seqwater's budgeted renewals expenditure and irrigation income for the 2011-12 year and Seqwater's estimated renewals income and expenditure for 2012-13; and
- established unbundled balances for the two water supply schemes (Mary Valley and Central Lockyer) which include supplemented/distribution networks to enable unbundled or transparent irrigation tariffs to be calculated for bulk supply and distribution services.

Indec's detailed report is provided as Attachment 4, and includes relevant data and a more detailed explanation of its approach.

Table 6-1 presents Indec's recommended ARR balances as at 30 June 2013 on a total scheme basis. These have been adopted by Seqwater when calculating the renewals annuity and lower bound costs.

Table 6-1. Forecast ARR balances as at 30 June 2013 ($000)

Water Supply Scheme	Total Scheme ARR Balance 30 June 2013	Deficit or Surplus balance
Central Lockyer	(345.6)	Deficit
Morton Vale Distribution	984.6	Surplus
Lower Lockyer	(533.7)	Deficit
Logan River	(707.2)	Deficit
Cedar Pocket Dam	15.6	Surplus
Mary Valley	(3,844.4)	Deficit
Pie Creek	129.3	Surplus
Warrill Valley	(575.4)	Deficit
TOTAL	**(4,876.8)**	**Net Deficit**

As indicated above, these balances are based on forecast renewals expenditure and revenue for 2011-12 and 2012-13. Seqwater expects that these balances will be updated based on actual and updated forecasts as they come to hand prior to the QCA's Final Report.

Consequential adjustments to grid service charges

Since 2008-09 an interim arrangement has existed which has meant the WGM has been allocated all renewals costs in the three ex-SunWater shared schemes (Logan River, Mary River and Warrill Valley).

When the SEQ Water Grid was formed in July 2008, decisions were required concerning the allocation of costs between the WGM and irrigators. An interim approach was developed with the QWC designed to defer this decision until irrigation prices were reviewed in the future. One condition of this arrangement was for Seqwater to notionally account for and set aside renewals

annuity collections from irrigators in ex-SunWater shared schemes pending the outcome of this review. [58] This interim arrangement also meant that 100% of all renewals expenditure in shared schemes was added to the RAB for grid service charges and recovered from the WGM.

Furthermore, 100% of operating costs in all schemes were included in GSCs, with irrigation revenues (net of renewals collections) passed through to the WGM as a revenue offset.

The review of irrigation charges now provides the opportunity to revise and bed down long-term arrangements. Consequently, Seqwater proposes adjustments to avoid and correct for potential double-recovery of costs. This is consistent with the intent of the interim arrangements.

Given that a renewals balance has now been established for irrigation services, it is recommended that the RAB for grid service charges be reduced to reflect the cost allocation between irrigators and other users (including the WGM). This approach would involve:

- Seqwater retaining the renewals annuity revenue collected, and assigning to irrigators their share of renewals expenditure as has occurred through constructing new ARR balances; and
- Deducting the expenditure attributable to irrigation from the RAB for grid service charges, retrospective to 2008-09. This adjustment should mirror the renewals expenditure and apportionment of that expenditure to irrigation adopted when constructing the ARR balance. This would mean the RAB adjustment should include both capital and operating costs treated as renewals expenditure, as well as the non-direct costs allocated to that expenditure.

Seqwater expects that this adjustment would have a negligible impact on the RAB. The mechanism for this adjustment (which would need to extend back to 2008-09) requires further consideration, given this RAB is set under the regulatory regime for grid service charges, not irrigation pricing.

For Central Brisbane WSS, there is to be no retrospective adjustment of grid service charges on the basis that the QWC had previously accepted that no costs were to be allocated to these irrigators as its interim position, and Seqwater has collected no renewals income.

Seqwater proposes to identify the value of the RAB reduction and develop the process for adjusting the RAB cooperatively with the QCA.

6.2 Forecast renewals expenditure

Seqwater has prepared renewals forecasts over a 30-year rolling period, but proposes the renewals annuity to be based on a 20-year period. This section provides a summary of the

[58] These arrangements are in addition to the regime for operating costs, whereby the WGM pays 100% of operating costs in all schemes, including the non-shared schemes, and the revenues from irrigators in those schemes are offset against Grid Service Charges to the WGM. The renewals component of the revenue is taken out.

forecasting approach. A detailed description of the forecasting methodology is provided at Attachment 2.

Definition and scope of renewals expenditure

Seqwater has defined renewals as non-maintenance expenditure that is required to maintain the service capacity of the assets. The box below sets out Seqwater's definition of renewals.

Renewals definition

Renewals includes (regardless of frequency or cost) the following types of works:

- replacement of assets and components of assets, including replacements required in response to events causing asset damage;
- refurbishment of assets and components of assets, including replacements required in response to events causing asset damage; and
- upgrade or modification to assets when required for compliance purposes. In accordance with the Referral Notice to the QCA, capital expenditure (renewals) costs for dam safety upgrades and meter upgrades to meet national metering standards have been excluded, and while such works are noted in this report for completeness, they are not included in the renewals annuity.

For clarity, renewals includes all expenditure other than:

- capacity augmentations;
- routine maintenance;
- normal operations[59];
- emergency breakdowns;
- the cost of the initial meter for a customer (which is at the cost of that customer); and
- the cost of performing major (e.g. 5-yearly) dam safety inspections.

Seqwater has based its renewals forecast on the more significant and predictable renewals expenditure items. Seqwater has not attempted to include minor renewals projects (less than $10,000), or renewals on water treatment plants at recreation areas, or make any allowance or contingency for renewals expenditure arising from damage or changes in law. This approach has been adopted to focus the renewals forecasting effort on more material items of expenditure.

For clarity, Seqwater proposes that the costs arising from assets and events will be accounted for as renewals expenditure (despite not being included in the forecast) where they meet the definition outlined above.

[59] At this point in time, not all assets have been loaded in to CIS including some assets that relate to irrigation supply. The forecast operating expenditure for 2012-13 includes maintenance for these assets, although these forecasts are generated outside of the CIS. This will change as all assets are migrated to CIS over the coming years.

Forecasting methodology

Identification of projects and renewals needs

Seqwater identified renewals needs and the schedule of projects through a range of processes, including:

- the existing Facility Asset Management Plans (FAMPs);
- the existing asset maintenance program;
- reports from site safety inspections and dam safety management program; and
- advice from operators.

Seqwater then evaluated potential projects against criticality and other criteria, and conducted workshops with local staff as well as site inspections to validate and adjust the scope and timing of projects. In many cases, Seqwater has revised the timing of major renewals jobs to a later time where there was not sufficient evidence that the asset required renewal, or renewal of the asset could be deferred at an acceptable risk of failing to meet service standards or compliance obligations.

Options analysis

Seqwater has had regard to the QCA's recommendations in its SunWater report about the need for options analysis when forecasting renewals projects.

In response, Seqwater undertook an options analysis for major projects that were scheduled to occur in the regulatory period.

Seqwater also examined major projects over the 20 year forecast period and identified projects that comprise more than 10% of the total renewals program in net present value (NPV) terms. Seqwater conducted a high-level review of these projects to determine if other options existed, and if so, whether those options would achieve the required service outcomes at lower cost.

Cost estimates

The cost of renewals projects has been estimated as follows:

- for major renewals projects occurring in the regulatory period 2013-14 to 2016-17, Seqwater has undertaken a detailed cost estimate from first principles; and
- for smaller projects or projects scheduled to occur in 2017-18 or beyond, Seqwater has largely relied on cost information from previous asset owners or past asset management plans. Seqwater engaged Cardno to update unit rates for replacement costs to $2012-13.

For clarity, Seqwater's costs of renewals projects do not include any allocation of non-direct costs. Chapter 7 provides more information about allocation of non-direct costs.

Indexation of renewals costs

The renewals outlays for the irrigation schemes consist of the same cost elements as their operating costs, namely direct labour, materials and contractors' services, other direct costs (such as rates and land taxes) and miscellaneous administrative costs.

The QCA has previously based forecast renewals cost escalation for the regulatory period on the same basis as for operating costs in its SunWater review. Accordingly, renewals costs, which comprise direct labour, materials and contractors' costs were escalated at 4% per annum over the regulatory period. All cost increases beyond the regulatory period (i.e. 2017) were limited to forecast inflation at 2.5%

Further explanation of escalation factors, including the rationale, is provided in Chapter 7 of this submission.

6.3 Calculating the renewals annuity

Seqwater has calculated renewals annuities in accordance with the approach accepted by the QCA in its SunWater report. In short, this involves:

- calculating the NPV of the renewals expenditure at an appropriate discount rate, being Seqwater's weighted average cost of capital (WACC);
- adding deficit ARR balances to this NPV (or deducting surplus balances where the ARR is negative); and
- calculating a real annuity, using a real discount rate (WACC), over the planning period.

The key aspects of this calculation are set out below, namely the discount rate and planning period.

Discount rate

In its SunWater report, the QCA recommended a discount rate that reflected SunWater's opportunity cost of funds, or WACC.[60] The QCA also endorsed the calculation of a real annuity, which required a real WACC to be applied to the calculation.

The QCA considered whether different rates should apply to different segments of SunWater's business – for example, irrigation, urban and industrial users, as well as whether rates should be

[60] QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. p107.

different across individual WSSs. The QCA engaged NERA to examine this question, and concluded:[61]

> *The Authority accepts NERA's findings that, in principle, different segments of SunWater's business may give rise to different systematic risk profiles. This is more likely to be the case when comparing irrigation, urban, and industrial activities. However, it is less likely to be valid for irrigation activities across different schemes, and this is the more relevant consideration for the pricing of irrigation services.*

The QCA recommended a WACC of 7.62% (Officer WACC3).

Seqwater has recently made its submission to the QCA for 2012-13 GSCs. The WACC for GSCs is largely prescribed under the Price Regulator's Referral Notice to the QCA, with non-market pre-determined. The Referral Notice also requires the QCA to adopt market-sensitive parameters that align with Queensland Treasury Corporation (QTC) forecasts and Seqwater's actual cost of debt. Seqwater notes that aspects of the WACC calculation, as prescribed for the QCA, are a departure from the QCA's standard practice.

The non-market sensitive parameters recommended in the draft SunWater report are set out below:

Table 6-2. Comparison between QCA draft SunWater WACC and Seqwater GSCs

Non-market sensitive parameters	QCA draft SunWater WACC	Seqwater GSCs
Market risk premium	6.0%	6.0%
Capital structure (debt to value ratio)	60%	50%
Debt beta	0.11	-
Asset beta	0.3	-
Equity beta	0.55	0.68
Gamma	0.5	0.5

For the market sensitive parameters, the QCA adopted benchmark values for the cost of debt for SunWater. The cost of debt and risk free rate were determined over a 5-year term to maturity (aligning with the regulatory period) and a debt financing allowance (including credit default swap and interest rate swap allowance) was included. For 2012-13 GSCs, the QCA was directed to adopt the risk free rate as advised by QTC, and the actual cost of debt for Seqwater, as forecast by QTC. Seqwater has obtained forecasts from QTC as follows:

- risk free rate - 5.925%

[61] QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. p376

- debt margin – 2.1%
- cost of debt – 8.04%
- inflation – 2.5%.

Seqwater's forecast WACC, using these parameters, is 9.90% (pre-tax nominal[62]). This translates to 7.22% pre-tax real.

Seqwater notes the QCA's conclusion that different business segments may give rise to different systematic risk, and hence different WACCs. This would support a different WACC applying for GSCs (which relate to supply to the urban sector) as opposed to irrigators.

Seqwater also notes that the QCA is to review GSCs for 2013-14 to 2014-15, and the precise terms of that review are yet to be set for the QCA by the Price Regulator. These terms of reference may arise prior to the QCA publishing its draft report for Seqwater's irrigation prices.

Accordingly, Seqwater is reluctant to present a proposed WACC from first principles, and it would prefer that considerations about WACC for irrigation pricing do not lead to binding positions about the WACC for GSCs into the future, particularly given the implications of the WACC for GSCs is far more significant in revenue terms.

Instead, Seqwater proposes an interim WACC is adopted, based on the WACC as proposed for 2012-13 GSCs. This interim WACC should be revisited if the Price Regulator issues a Referral Notice to the QCA for 2013-14 GSCs (and beyond) and following this:

- if the Referral Notice requires the QCA to develop a WACC from first principles, then the discount rate for renewals should be determined alongside this review to avoid duplication and ensure all issues are considered fully; or
- if the Referral Notice continues to prescribe WACC parameters for GSCs, then a stand-alone assessment of WACC for irrigation prices is performed, as occurred for SunWater.

In closing, Seqwater proposes an interim WACC of 7.22%, which is the pre-tax real version of the WACC currently estimated for 2012-13 GSCs.

Period

The current irrigation prices in ex-SunWater schemes are based on a 30-year rolling annuity.

In its SunWater report, the QCA commented that it would normally have adopted a 30-year renewals annuity based on examination of the renewals forecasts provided, but instead chose a 20 year period given the uncertainty of the expenditures forecast beyond 20-years, and the potential impacts on irrigator prices. [63]

[62] The QCA is required to adopt a pre-tax nominal WACC when calculating grid service charges.

[63] QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. pp 122-123.

Seqwater has prepared a forecast of renewals expenditure over 30 years to enable an informed assessment of the appropriate timeframe. Seqwater has noted that a number of major projects are forecast to occur at or around 20 years in a number of schemes, and in many cases Seqwater does not have sufficient confidence that these projects will need to occur in a 20 year window. However, such projects are more likely to be required in a 30 year timeframe.

On balance, Seqwater proposes a 20-year period (using a rolling annuity) on the basis that forecasts beyond this time become increasingly difficult and the scope for error increases substantially.

Renewals projections within each tariff group are provided in NSPs.

Proposed renewals annuities

The proposed renewals annuity for each WSS for the regulatory period is provided in Table 6-8.

Table 6-3. Renewals annuity ($000, nominal)

WSS	2013-14	2014-15	2015-16	2016-17
Logan River	148.0	150.4	150.8	151.2
Central Brisbane River	1,030.9	1,031.8	1,107.9	1,459.7
Mary Valley	492.0	492.7	496.5	499.1
Warrill Valley	207.7	212.7	215.2	216.0
Lower Lockyer	217.4	221.6	222.2	223.1
Central Lockyer	300.5	304.5	306.6	308.3
Cedar Pocket	14.1	14.1	14.2	14.3
Pie Creek	64.2	64.8	64.9	65.1
Morton Vale Pipeline	(84.6)	(84.5)	(84.5)	(84.5)
Total	**2,390.2**	**2,408.2**	**2,493.9**	**2,852.2**

6.4 Allocation of renewals costs to WAE type

Bulk water schemes

There are two issues to consider when allocating costs to WAEs in a scheme:

- determining the nominal amount of WAE to assign costs to; and
- allocation of costs to priority groups (medium and high).

Determining the WAE base for cost allocation and pricing purposes

Chapter 5 set out the rationale for excluding loss WAE used within the Lower Lockyer and Warrill Valley WSSs for pricing purposes. These WAE have also been excluded from the WAE used to calculate the HUF percentages consistent with this approach.

Cost allocation between priority groups

In its SunWater report, the QCA recommended that Headworks Utilisation Factors (HUFs) be adopted for allocating renewals expenditure between different water entitlement priority groups.[64] The QCA also applied nominal WAE percentages (being the percent of the nominal medium priority WAE to the total nominal WAE in the scheme, unadjusted) for some operating costs. These are called nominal WAE %.

These HUFs are a hydrologic assessment of the percentage of storage dedicated to different entitlements, and typically result in a percentage split between medium and high priority.

In two of the seven WSSs there is only medium priority WAE, this means there is no need to assign costs between priority groups and hence no need to calculate a HUF. Also, there is only medium priority WAE in the Pie Creek tariff group, and hence no need to assign costs between priority groups in this segment.

In the Central Lockyer, there are four entitlement types (High, High A, High B and medium). As indicated above. Seqwater holds the 184ML of high priority, while irrigators hold the vast majority of the remaining WAE. The 2006 price review also treated all these irrigation WAE types the same for pricing purposes – for example, the irrigation customer WAE totalled 16,372ML in the Tier 1 report for Central Lockyer and Morton Vale tariff groups.[65] This is comparable to the 16,351ML set out in Chapter 3. Also, the 2006 review assigned 99.8% of costs to the irrigation sector, which effectively meant High A, High B and medium were treated the same. Seqwater does not propose to move from this pre-existing arrangement, particularly given the underlying resource management arrangements are yet to be set by DERM and codified in a final ROP. For example, water sharing rules are yet to be determined for the majority of WAE in the scheme, making any assessment of relative difference problematic.[66] Consequently, Seqwater did not commission a HUF assessment because the features of WAE in that scheme were still under review by DERM. Finally, Seqwater's 184ML of High Priority WAE is immaterial (1.1% of the total WAE in the scheme), and Seqwater does not believe a HUF for the scheme is justified nor would it add to the accuracy of the pricing outcomes. Instead, Seqwater therefore propose that nominal WAE % are applied in this scheme until such time as WAE are formalised, which means that non-Seqwater WAE holders account for 98.9% of lower bound costs.

64 QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. p150

65 SunWater (2006a). Statewide Irrigation Pricing Working Group- Tier 1 Report. p40.

66 Refer to the IROL, S2.5. http://www.derm.qld.gov.au/water/management/pdf/central_lockyer.pdf

Seqwater commissioned Parsons Brinckerhoff (PB) to calculate HUFs for the four remaining WSSs where more than one priority entitlement exists. PB replicated the methodology used in the SunWater report, and found that this methodology was generally applicable. A copy of the PB report is provided at Attachment 3.

In three of these WSSs, Logan, Warrill and the Mary Valley, irrigators are largely dependent on inflows from tributaries downstream of the major storage. These tributary inflows are counted as regulated supplies, and included in the volumes that can be taken by medium priority WAE holders. Moreover the water sharing rules in each ROP require an allowance is made for these inflows when calculating the announced allocation.

However, including these downstream tributary inflows would distort the HUF calculation, as the HUF is meant to represent the proportion of storage infrastructure dedicated to high and medium priority WAE. Inflows that occur downstream of the dam are therefore not relevant as they are not captured by the dam, but instead taken as available.

Accordingly, PB calculated HUFs by assuming zero tributary downstream inflows.

PB also applied the HUF to the Central Brisbane River WSS, and found that a strict application of the methodology resulted in a perverse outcome, where the HUF for medium priority WAE was 69%, yet medium priority WAEs account for only 7,041ML of the 286,041ML of total WAEs in the scheme (2.5%). This occurred because of specific characteristics of the Wivenhoe and Somerset dams and the WAE that they service. Two factors were identified:

- in broad terms, the HUF percentages are calculated by first determining the storage required to meet the needs of high priority WAE, and the residual storage is then assumed to relate to medium priority. In the Central Brisbane River WSS, the reliability of high priority WAE is, in practice, well above the WASO set in the ROP of 100%. This means that the WASO could be met with a far smaller storage, leaving a far greater proportion of storage assigned to medium priority; and
- under the water sharing rules, the cut-off volume for medium priority WAE is very low, and the dam has never reached this level in the historical period in the IQQM model.

PB concluded that these factors meant the HUF method was not applicable to the Central Brisbane River WSS.

PB suggested an alternative method is to calculate the ratio between medium and high priority factored by the cut-off percentage for medium priority entitlements, which calculates to 2.1%. This is slightly lower than the raw proportion of medium to high priority WAE in the scheme (2.5%), which is intuitively correct given medium priority must, by definition, command a lower (albeit slightly) proportion of storage compared to high priority.

The table below presents the proposed percentages to allocate renewals costs to medium priority WAE in each scheme. In all cases, the HUF adopted was based on the 15 year drought period, as per the approach approved for SunWater.

This shows that three of the seven WSSs are based on the HUF, and Central Brisbane River WSS is based on the adjusted ratio discussed above. In three schemes, all WAE is medium priority and hence those WAE attract 100% of renewals costs. In the Central Lockyer, a nominal WAE % is used given high priority is negligible and WAE have not been formalised in the scheme.

Table 6-4. Proposed allocation of renewals annuity to medium priority WAE

WSS	Method	Proposed allocation to medium priority (%)
Central Lockyer	Nominal WAE%	98.9
Lower Lockyer	None required	100.0
Logan River	HUF	16.0
Warrill Valley	HUF	11.0
Mary Valley	HUF	26.0
Pie Creek	None required	100.0
Cedar Pocket	None required	100.0
Central Brisbane River	Adjusted ratio of MP to HP	2.1

Applying these percentages to the renewals annuities above results in the following allocated to medium priority customers in each WSS.

Table 6-5. Allocation of renewals annuity to medium priority customers ($000, nominal)

WSS	2013-14	2014-15	2015-16	2016-17
Logan River	23.7	24.1	24.1	24.2
Central Brisbane River	22.1	22.2	23.8	31.3
Mary Valley	127.9	128.1	129.1	129.8
Warrill Valley	22.8	23.4	23.7	23.8
Lower Lockyer	217.4	221.6	222.2	223.1
Central Lockyer	297.1	301.1	303.2	304.9
Cedar Pocket	14.1	14.1	14.2	14.3
Pie Creek	64.2	64.8	64.9	65.1
Morton Vale Pipeline	(84.6)	(84.5)	(84.5)	(84.5)
Total	**704.8**	**714.9**	**720.8**	**731.9**

Renewals annuity forecasts are not directly comparable to those provided as part of the 2006 price review. In particular, the SunWater cost information:

- is not provided for all tariff groups. In particular, no information is provided for the Central Brisbane River scheme and costs for a number of other tariff groups (Cedar Pocket, Pie Creek and Morton Vale Pipeline) were incorporated in other scheme cost estimates and not separately identified; and
- applies a productivity adjustment to proposed lower bound costs, but does not identify the adjustment attributable to the renewals annuity.

Distribution systems

In the SunWater report, the QCA recommended that renewals costs be allocated based on nominal WAEs in distribution systems.[67]

Seqwater proposes to adopt the same approach for the Morton Vale Pipeline, but to base tariffs on the contracted volumes, namely 3,470ML, rather than the maximum WAE indicated in the IROL of 3,507ML.

Interaction with future Grid Service Charges

As indicated above, interim arrangements were established for renewals expenditure, and Seqwater has proposed adjustments to the RAB for grid service charges to 30 June, 2013.

In the future, it is important that capital expenditure in the WSSs shared with the WGM are appropriately dealt with between the two different pricing frameworks: irrigation charges (renewals annuity) and grid service charges (RAB – depreciation). Seqwater propose to work cooperatively with the QCA to develop an appropriate methodology.

[67] QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. p153.

Chapter 7 - Operating expenditure

This chapter sets out Seqwater's forecast operating expenditure for the period 2013-14 to 2016-17.

The Referral Notice requires the QCA to provide a revenue stream that allows Seqwater to recover efficient operational, maintenance and administrative costs to ensure the continuing delivery of water services. The Referral Notice indicates that these costs include, but are not limited to:

- electricity costs;
- recreation management costs;
- compliance with workplace, health and safety; and
- compliance with Australian and Queensland Government initiatives on water management, planning, trading, accounting, metering and measurement.

Operating activities include service provision, compliance, recreation, and other supporting activities:

- service provision relates to:
  - scheduling and releasing bulk water from storages, surveillance of water levels and flows in the river, and quarterly meter reading; and
  - customer service and account management.
- compliance requirements relate to:
  - requirements set out in the ROP and ROL;
  - dam safety obligations under the *Water Act 2000*;
  - environmental management obligations to comply with the ROP and *Environmental Protection Act 1994*; and
  - land management, workplace health and safety obligations and other reporting obligations;
- recreation relates to the operation and maintenance of recreation facilities in the schemes; and
- other supporting activities required to carry out services and comply with law, and which cover a range of services including central procurement, human resources and legal services.

Operating costs are driven by operational elements such as meter reading and maintenance, environmental management obligations, data management, compliance reporting, customer

support and billing. These costs do not vary with the volume of water taken by customers and are therefore classified as fixed costs.

Components of operating expenditure, most notably non-direct costs, have not previously been separately attributed to assets by Seqwater. As a consequence, it is not possible to make a comparison of total forecast and historical operating expenditure attributable to the assets servicing irrigation customers. However, Seqwater has adjusted 2011-12 budgeted direct operating expenditure to allow for a like-with-like comparison with forecast 2012-13 expenditure.

Similarly, the lower bound cost benchmarks developed for the 2006 price review are not directly comparable to the Seqwater forecasts or historic costs. In particular, the published SunWater cost information:

- does not disaggregate operating costs for each tariff groups e.g. Cedar Pocket, Pie Creek and Morton Vale Pipeline were incorporated in other scheme cost estimates and not separately identified;
- provides aggregate operations, maintenance and administration data, with no breakdown between direct and non-direct costs; and
- applies a productivity adjustment to proposed lower bound costs, but does not identify the adjustment attributable to operating expenditure as distinct from renewals.

Moreover, these lower bound costs were developed more than 6 years ago and amidst very different conditions. While comparisons between the 2006 benchmarks may be of interest where data is disaggregated, there is little value in attempting to explain departures from the 2006 data given Seqwater had no input to these forecasts and did not have (due to circumstances surrounding its formation) the financial systems to gather and report this data in any case.

7.1 Forecasting methodology

Seqwater has adopted an approach to forecasting whereby operating expenditure for irrigation services is derived for a representative base year (2012-13) and escalated forward over each year of the regulatory period on the basis of predetermined escalation factors.

The 2012-13 year was adopted as the base year as it provides the best and most current representation of the costs required to deliver Seqwater's service standards and obligations during the regulatory period. Aggregate operating costs for 2012-13 (including costs associated with both grid and irrigation services but excluding costs associated with unregulated activities) were derived as part of Seqwater's 2012-13 GSC submission to the QCA. Seqwater developed its 2012-13 budget on the basis of a zero base build-up, taking into account costs which could be reasonably anticipated at the time of budget development. The 2012-13 operating expenditure forecasts provided in the GSC submission have also been reviewed by the QCA for prudency and efficiency. Accordingly, Seqwater considers that the 2012-13 forecasts provide an efficient

baseline from which to forecast operating expenditure for the 2013-14 to 2016-17 regulatory period.

The final GSCs are yet to be published, and Seqwater acknowledges that the QCA may recommend different operating costs to those submitted by Seqwater. As indicated in Chapter 1, Seqwater accepts that the 2012-13 baseline costs used for irrigation pricing should align with the efficient operating costs recommended by the QCA for GSCs. Accordingly, the operating costs presented in this chapter may be different to those ultimately applied. Seqwater would have preferred to include the approved 2012-13 GSCs as its baseline operating costs, but was not able to do so as this information was not available at the time this updated submission and accompanying NSPs were required by the QCA.

As set out in Chapter 3, irrigation services are narrower in scope than grid services. For example, there are no water quality obligations for irrigation compared to grid services. Hence it was necessary for Seqwater to develop a robust, stand-alone estimate of operating costs associated with irrigation services. Accordingly, Seqwater conducted a rigorous review of the initial 2012-13 direct irrigation operating expenditure forecasts produced as part of the GSC submission to ensure that only those costs associated with the provision of irrigation services are included. In addition, in order to ensure that the 2012-13 year reflects a representative base year and therefore provides a suitable base for forecasting future irrigation operating expenditure, Seqwater removed abnormal and one-off expenditure items (including operating expenditure that would be considered in the irrigation renewals forecasts) from the 2012-13 irrigation services estimates.

Seqwater is also required to develop forecasts of non-direct operating costs applicable to each of the WSS and the Morton Vale Pipeline. However, Seqwater does not have sufficiently disaggregated data at the project level to allow it to allocate non-direct costs to individual renewals projects over the regulatory period across irrigation schemes and other many other assets providing grid services alone. Indeed, to allocate indirect costs to renewals expenditure would require a forecast of all renewals work, both grid and non-grid, over the 20 year planning horizon required for the renewals annuity. Accordingly, while there is merit in doing so, allocations of non-direct costs to renewals / capital expenditure were not examined and all non-direct costs were therefore allocated to operating expenditure only.

As for the direct operating and maintenance costs, forecast non-direct operating costs are developed from an efficient base year (2012-13) escalated forward over the regulatory period.

Similar to the process associated with direct operating costs, aggregate non-direct operating costs for 2012-13 produced as part of Seqwater's grid services submission to the QCA were reviewed to identify those costs specifically associated with the provision of irrigation services. In addition, one-off and abnormal expenditure items were removed to generate a representative base year estimate of non-direct operating expenditure associated with the WSSs and Morton Vale Pipeline.

The resultant non-direct costs for 2012-13 were then allocated to schemes and the Morton Vale Pipeline. Seqwater allocated the majority of these costs to schemes and the Morton Vale Pipeline on the basis of direct costs.[68] This is consistent with the approach used by SunWater in the 2006 price review.[69]

While a cost allocation approach would normally be determined from first principles, canvassing individual cost drivers and assessing options against certain criteria, there are a number of practical and other limitations to consider – for example irrigation pricing is a very small component of Seqwater's revenues, and implementing cost allocation into the financial system involves substantial cost and resourcing effort.

Seqwater note that, in contrast, the QCA recommended the use of direct labour cost as an allocator in its recent SunWater report. Seqwater considers that cost allocators need not be consistent across all businesses providing irrigation supplies and should instead be developed on a case-by-case basis recognising differences in individual businesses where appropriate. In particular, Deloitte's report to the QCA on SunWater's administration costs highlighted the potential for the use of different cost allocators across a business.[70]

Notwithstanding the above, for completeness, Seqwater performed allocations on the basis of both direct labour costs and direct costs and compared the results. While allocations of non-direct costs using the direct cost methodology were broadly consistent with a priori expectations, the use of direct labour costs as an allocator produced inconsistent results. In particular, the use of a direct labour cost allocator resulted in significantly more costs being allocated to schemes. Seqwater consider that this was not representative of actual costs incurred, but is likely to reflect cost reporting procedures in the business, particularly in relation to the identification and attribution of direct labour costs.

Seqwater conclude that direct costs are the preferred allocator and considered that the use of direct costs to allocate non-direct costs is reasonable on the basis that the allocator:

- represents a reasonable driver of non-direct operating costs in the business;
- is relatively simple to administer being both easy to identify and extract from the reporting system;
- is amenable to review at regular intervals to facilitate comparison between forecast and actual outcomes and allows the business to update allocations where appropriate; and
- results in an allocation of costs to WSS that is broadly consistent with a priori expectations.

[68] Insurance premiums were allocated on the basis of individual asset values.

[69] See SunWater (2006), SunWater Irrigation Price Review 2005-06 Tier 1 Report (April) p.23.

[70] Deloitte (2011), Queensland Competition Authority SunWater Administration Cost Review Phase 2, August.

Once 2012-13 base (direct and non-direct) operating costs were derived, these were escalated forward to produce annual forecasts of total operating expenditure for each of the schemes and the Morton Vale Pipeline over the regulatory period. The escalators used are generally the same as those recommended by the QCA in its SunWater report.

Costs were then further allocated to medium and high priority customer groups based on a combination of HUF and nominal WAE percentages as recommended by the QCA in its SunWater report.

7.2 Fixed direct operating costs

Direct costs are those costs that have been budgeted at the individual asset level. This section examines those direct costs that are considered fixed.

Operations

Operations relate to the day-to-day costs of delivering water and meeting compliance obligations.

Direct fixed operations costs for all schemes for 2012-13 by type of expenditure are presented below.

Table 7-1. Direct fixed operations expenditure – 2012-13 ($2012-13, $000)

Type of expenditure	Total
Dam operations	5,131.1
Group support	2,830.8
Infrastructure maintenance	1,187.0
Other	1,673.3
Total	**10,822.2**

As discussed above, Seqwater conducted a review of the initial direct operating costs attributed to irrigation services as part of the 2012-13 GSC submission. This review identified that a number of operating cost categories were not applicable to the provision of irrigation services (and were more appropriately attributed to grid services), including:

- all costs associated with Technical Warranty and Development;
- a number of costs associated with Asset Delivery, including asset policy and strategy, integrated asset planning and the program management office; and
- water treatment and water quality costs.

Costs associated with these activities were not included in the lower bound cost estimates.

Table 7-2 below provides a breakdown of direct operating expenditure for 2012-13 for each WSS and the Morton Vale Pipeline.

Table 7-2. Direct fixed operating expenditure – 2012-13 ($2012-13, $000)

WSS	Dam ops	Group support	Infrastructure maintenance	Other	Total
Logan River	304.5	135.2	43.3	86.9	569.9
Central Brisbane River	3,466.8	2,059.7	756.2	1,052.4	7,335.1
Mary Valley	221.5	137.9	90.8	206.0	656.2
Warrill Valley	357.4	305.3	61.4	179.2	903.3
Lower Lockyer	303.4	134.9	92.6	148.8	679.7
Central Lockyer	284.5	47.8	65.0	-	397.3
Cedar Pocket	65.0	10.0	1.1	-	76.1
Pie Creek	76.2	-	76.1	-	152.3
Morton Vale	52.9	-	0.5	-	53.4
Total	**5,132.1**	**2,830.8**	**1,187.0**	**1,673.2**	**10,823.2**

Operating expenditure by cost category is discussed below.

Dam Operations

Dam Operations is the largest contributor to direct operating costs. Dam Operations aims to deliver best practice management of dams and water sources while being fully compliant and effective in operating, maintaining and monitoring its water source infrastructure.

Dam Operations must meet the regulatory requirements under various Acts including those relating to Dam Safety, Flood Management, Resource Operating Plans, and providing sufficient water to meet standards of service.

Dam Operations is relatively labour intensive and expenditure is driven by:

- providing efficient service to irrigation customers in terms of information and management and delivery of service;
- developing robust and acceptable systems to monitor water flows to manage water sources, floods and regulations;

- developing an effective and technically capable and resilient flood operations centre utilising systems of quality standards;
- improving data management to ensure compliance on a wide variety of water management areas;
- ensuring security and safety at Seqwater water sources is meeting regulatory and community standards; and
- developing system operating plans to ensure the efficiency and operation of dams, weirs, bores and other water sources.

Some cost efficiencies have been introduced by Seqwater including:

- setting up its own Flood Operations Centre to ensure effective operation but also to reduce contractor cost associated with hiring SunWater to provide services; and
- utilising staff from other group as on call and standby dam and Flood Centre operators, rather than full time employees or contractors, to reduce costs.

The proportion of Dam Operations costs attributed to each of the schemes primarily reflects dam size, with the Central Brisbane River WSS accounting for the majority of expenditure.

Group support

Group Support has responsibility for the development and delivery of recreation and catchment maintenance services for all operational assets. The team ensures that asset management plans, processes, systems and practices are implemented in accordance with relevant regulatory requirements.

Seqwater has responsibility for the on-going management and maintenance of recreation sites transferred from SunWater.

The Referral Notice requires that the costs of recreation facilities are included in the lower bound cost base. Recreation facilities must be managed in a sustainable and environmentally responsible manner to ensure that Seqwater's core responsibilities and accountabilities are not adversely impacted. Seqwater water storages provide the majority of sites in South East Queensland for recreation on/in freshwater. In addition, Seqwater's land holdings contribute 50% of "greenspace" in South East Queensland under the State Government's Greenspace Strategy. This means that Seqwater assets provide a "recreational landscape" of regional significance. Between 2009 and 2010 an estimated 4.5 million people visited Seqwater recreation sites.

Expenditure on recreation facilities is dependent on a range of factors including:

- population growth;
- State Government policy e.g. Greenspace strategy; and

- weather (full dams/warm weather increases visitation).

Relevant compliance obligations include:

- recreation responsibilities – relating to public safety legislation and recreational water quality under the National Health & Medical Research Council (NHMRC) Guidelines for Managing Risk in Recreation Water, as well as duties of care under common law pertaining to recreational water quality and public safety including workplace health and safety; and
- catchment management responsibilities – relating to Declared Catchment Areas under the *Sustainable Planning Act 2009* as well as duties of care under common law pertaining to public health and onsite public safety, plus specific legislative obligations pertaining to catchment conservation, pest management and stock route management.

The costs of activities relating to catchment management for drinking water quality outcomes are not included in the lower bound cost base.

Infrastructure maintenance

Infrastructure maintenance is concerned with the delivery of scheduled, planned and reactive maintenance of Seqwater's assets in a timely, effective and efficient manner that supports water production.

The development of Seqwater's maintenance practices is provided below.

Evolution of Seqwater's maintenance practices

In 2008-09, Seqwater was transferred assets from a large number of council-owned entities, SEQWater Corporation and SunWater. While the physical assets were transferred, much of the asset history was not. The little information that was available was usually piecemeal and held in a variety of different systems, formats and asset levels. In many cases, asset management systems did not exist nor did established maintenance programs. The staff transferred to Seqwater were mostly operations rather than maintenance staff.

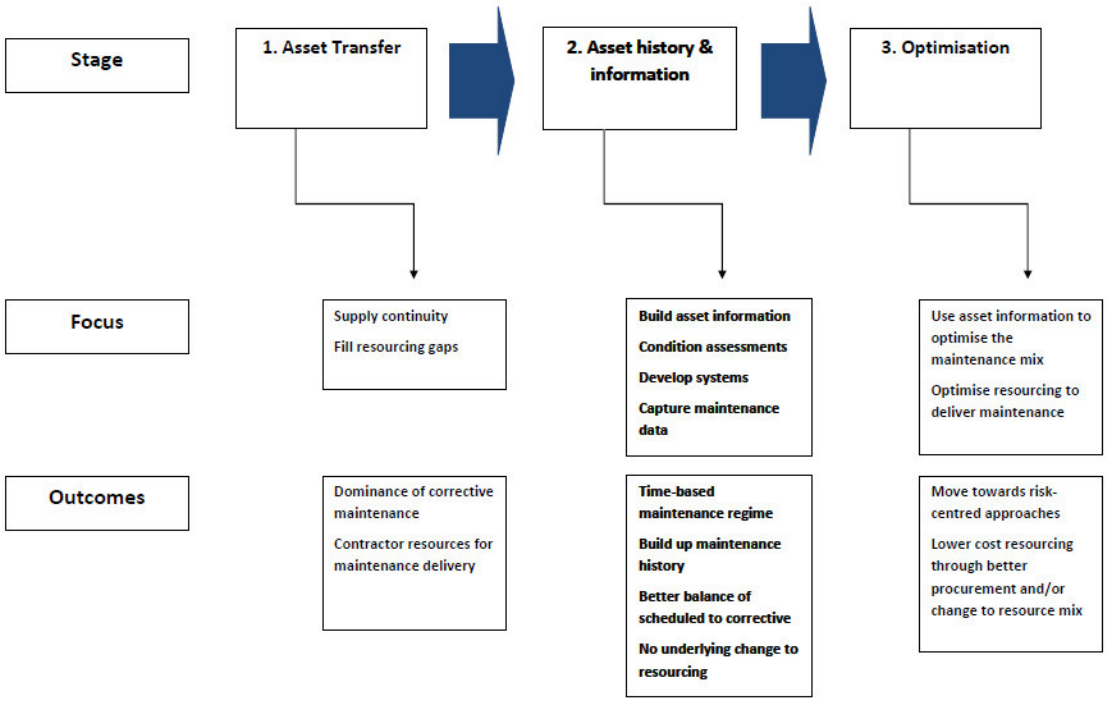
Consequently, Seqwater did not have the benefit of past maintenance history or pre-existing systems upon which to base its forward maintenance program, and has had to rebuild these systems and processes and start to collect asset history from a near zero base.

Secondly, Seqwater did not have an internal maintenance workforce transferred to it upon taking ownership of the assets. In response, Seqwater adopted a resourcing model that involved re-orientating existing roles to manage work undertaken by external resources. Maintenance contractors were secured through a panel of providers. This provided the most flexibility to respond to varying maintenance requirements, enabling Seqwater to leverage off existing productive relationships with both local and regional contractors. Seqwater is not yet at the stage

where it can conclude that a significant change to its current resourcing arrangements is warranted, and there continues to be value in having the flexibility afforded by continuing to outsource maintenance.

Seqwater has taken significant steps to develop and implement a robust maintenance program. This work is still evolving and moving towards industry best practice. This process is resource-intensive and relies on a long history of consistent asset information of appropriate quality before reaching full maturity. This process can be described in terms of three distinct phases, as indicated in the diagram below:

Stages of maintenance practices



Seqwater is currently in the second stage. Achievements to date include establishing a single asset management system within the CIS, identifying assets and establishing a hierarchy, and populating the system with data. Seqwater has also prepared maintenance plans for scheduled items on a monthly timestep for each facility, based on a 12-month rolling schedule. These maintenance tasks and their timings are included in the CIS, which then uses work orders to initiate jobs. These work orders also contain work instructions for each maintenance task.

There has been significant progress in implementing a robust maintenance system. However, it will take some years to build a reasonable asset history and information base. Once this occurs, more sophisticated maintenance practices can be developed in the third stage.

The asset improvement strategy through the FAMPS process is now fully implemented which provides opportunistic planned maintenance activities. The unplanned (reactive) maintenance is an unknown quantity but as asset condition improves through scheduled maintenance reactive breakdowns will be trending downwards.

The 2012-13 expenditure is split into two areas:

- Planned maintenance – which relates to regular maintenance items that arise from an annual maintenance schedule, as well as work that is added to the maintenance program as a result of new information or inspections carried out during the year.; and
- Unplanned maintenance – relating to maintenance that is made in reaction to events and where corrective work needs to be carried out quickly (e.g. for compliance or service reasons).

Seqwater have set a target ratio of 71:29 planned maintenance (scheduled and planned) to unplanned maintenance in 2012-13. This ratio has been applied for the forecast period.

Forecasts of planned and unplanned maintenance expenditure are provided for each WSS and the Morton Vale Pipeline in the attached NSPs.

The majority of maintenance is delivered through contractors through Seqwater's Panel of Providers with supervision undertaken by Seqwater staff. Across 3 districts Seqwater have 49 contractors based full time on sites plus numerous contractors employed on an ad-hoc basis delivering work as required depending on workloads.

Rates

Seqwater incurs rates in relation to its land portfolio, including storages. Seqwater has forecast rates costs at each WSS and the Morton Vale Pipeline. In some cases, no costs are forecast on the basis that the land held is not rateable. In some cases, the land was previously rateable prior to 2012-13, and was included in 2006 irrigation lower bound costs.

Seqwater has forecast rates based on the 2011-12 rates, and has forecast these to increase by CPI (2.5%) for the regulatory period.

The table below sets out the forecast costs for 2012-13.

Table 7-3. Forecast rates - 2012-13 ($2012-13, $000)

WSS	2012-13
Logan River	56.2
Central Brisbane River	689.2
Mary Valley	-
Warrill Valley	43.9
Lower Lockyer	46.8
Central Lockyer	-
Cedar Pocket	-
Pie Creek	-
Morton Vale Pipeline	-
Total	**836.1**

Dam safety inspections

Routine dam safety inspections are carried out to identify and plan maintenance requirements and to provide information for management planning of water delivery assets. These costs are included in forecast operations expenditure.

However, more thorough periodic dam safety inspections are carried out on a 5 yearly basis. Given the frequency of these inspections, it is not considered appropriate to incorporate the associated expenditure in Seqwater's renewals forecasts. Rather these costs are required to be recouped within the regulatory period and have been added to forecast direct operating expenditure in the year in which the expenditure is expected to be incurred.

The cost and timing of these inspections is provided in Table 7-4.

Table 7-4. Forecast dam safety inspection ($000)

WSS	2013-14	2014-15	2015-16	2016-17
Logan River				27.6
Central Brisbane River			53.8	
Mary Valley			26.9	
Warrill Valley				27.6
Lower Lockyer	25.6			
Central Lockyer		26.3	-	27.6
Cedar Pocket				27.6
Total	**25.6**	**26.3**	**80.8**	**110.4**

Metering

Consistent with the Referral Notice to the QCA, capital expenditure (renewals) costs for meter upgrades to meet national metering standards have been excluded from this submission. Similarly, operating costs associated with complying with the new standards have not been included in this submission. However, as discussed in Chapter 5, to the extent that national metering standards are introduced and additional costs are incurred, Seqwater requests that the QCA permit it to recover these costs as an end of period adjustment.

Total fixed direct operating costs

Aggregate fixed direct operating costs for 2012-13 are provided in Table 7-5. For comparison, budgeted 2011-12 direct operating costs are also provided. Non-irrigation costs were removed from the budgeted 2011-12 estimates to facilitate comparison. The results indicate that forecast 2012-13 direct operating costs are 6.5% higher than comparable 2011-12 costs (budgeted).

Comparisons to earlier Seqwater direct cost information are complicated by the difficulty in extracting non-irrigation costs from the data, and the comparisons to 2011-12 require some caution as budgets in that year were not developed with the same rigour as for 2012-13 in terms of assigning costs to the correct assets or WSS. Indeed, the 2011-12 costs below are likely to be understated, and hence the difference to 2012-13 will be less than that suggested from this table.

Table 7-5. Direct operating costs ($2012-13, $000)*

WSS	2011-12 (budgeted)**	2012-13
Logan River	693.9	626.1
Central Brisbane River	8,006.8	8,024.3
Mary Valley	950.3	656.2
Warrill Valley	881.1	947.2
Lower Lockyer	551.8	726.5
Central Lockyer	257.1	397.2
Cedar Pocket	25.0	76.1
Pie Creek	105.9	152.3
Morton Vale Pipeline	-	53.4
Total	**11,471.9**	**11,659.4**

* Includes rates

** Does not include the same rigour in terms of forecasting costs by location as for 2012-13, and hence is likely to understate costs.

7.3 Revenue offsets

Seqwater receives revenue from other sources, including property leases, recreation fees and the provision of town water supplies. The estimated revenue from these sources for 2012-13 is provided in Table 7-6.

Table 7-6. Other revenue – 2012-13 ($2012-13, $000)

WSS	Other revenue
Logan River	24.4
Central Brisbane River	510.9
Mary Valley	13.5
Warrill Valley	19.5
Lower Lockyer	13.8
Central Lockyer	0.7
Cedar Pocket	0
Pie Creek	0.4
Morton Vale Pipeline	0
Total	**583.2**

To ensure that Seqwater is not overcompensated for the provision of services, this revenue has been removed from the estimate of lower bound costs for 2012-13. This is consistent with past practice and the approach adopted for the SunWater report.

7.4 Non Direct costs

Non-direct costs are considered to be fixed (that is, they do not change with water use).

Similar to the process applied to direct operating costs, aggregate non-direct operating costs provided as part of the 2012-13 grid services submission[71] were reviewed and those costs not associated with the provision of irrigation services were removed. In particular, a number of activities in the Technical Warranty and Development and Water Delivery groups were removed from the process as they relate solely to the provision of grid services. In addition, to ensure that non-direct cost for 2012-13 reflect a representative year, one-off and abnormal expenditure items have been removed.

The review process also identified:

- a number of cost categories (e.g. business services, finance etc) that could legitimately be attributed to assets where the operation and maintenance of assets are completely outsourced – for example ex-WaterSecure assets (Gold Coast Desalination Plant, Western

[71] Refer above regarding the need to align operating costs to final GSCs.

Corridor Recycled Water Scheme), and the Noosa Water Treatment Plant (WTP). For example, it was not considered reasonable to allocate human resources management or payroll costs to these assets as the labour is provided by the O&M contractor (Veolia Water), not Seqwater; and

- costs that could be directly attributed to schemes in general or to a specific scheme. For example, costs associated with the flood control centre are able to be attributed to the Central Brisbane River scheme.

These costs and costs to be associated with all service groups were allocated on the basis of direct costs.[72] A summary of costs allocated to WSSs and the Morton Vale Pipeline is provided in Table 7-7.

Table 7-7. Non-direct operating costs – 2012-13 ($2012-13, $000)

Expenditure type	Total	Allocated to Irrigation schemes
Technical warranty and development	10,475.2	-
Water Delivery	16,868.81	11,261.43
Asset Delivery	8,153.48	5,199.91
Corporate costs		
Business Services	38,000.50	24,054.50
Organisational development	12,584.16	12,584.16
CEO	4,440.47	1,669.14
Flood Control (Central Brisbane)	2,380.43	2,380.43
Other	1,992.39	1,196.67
Total	**94,895.42**	**58,346.24**

Corporate functions have been defined as comprising the office of the CEO and the Organisational Development and Business Services groups. Corporate costs represent almost half the non-direct operating costs allocated to irrigation schemes in 2012-13 (excluding Flood Control costs).

The major component of corporate costs relates to Information, Communication and Technology (ICT). The major functions involved in ICT relate to services support, database administration, monitor and maintenance of various servers and network infrastructure, demand management, application management, strategy maintenance and development, business analysis and subject matter expert advice.

[72] Costs associated with insurance premiums were allocated on the basis of replacement asset values.

The overall increases in corporate costs have been offset by a reduction in rates costs (contained within the Property and Facilities budget) resulting from liaison with Government to exclude certain items from the Tax Equivalence Regime.

Flood control costs reflect those costs associated with the on-going operation of Central Brisbane flood control centres and are attributable to Central Brisbane only.

The proportion of non-direct operations costs allocated to each of the schemes and the Morton Vale Pipeline is provided below.

Table 7-8. Allocated non-direct operations costs – 2012-13 ($2012-13, $000)

WSS	Operations cost
Logan River	273.6
Central Brisbane River	5,902.0
Mary Valley	315.1
Warrill Valley	433.7
Lower Lockyer	326.3
Central Lockyer	190.7
Cedar Pocket	36.5
Pie Creek	73.1
Morton Vale Pipeline	25.6
Total	**7,576.7**

Other non-direct operating costs

In addition to non-direct operations costs, Seqwater has allocated costs to schemes and the Morton Vale Pipeline associated with the use of non-infrastructure assets, insurance and working capital.

Non-infrastructure assets

The irrigation schemes also utilise a range of non-infrastructure assets (buildings and plant and equipment). These assets are not included in the renewals expenditure forecasts. However, it is necessary for costs associated with the use of these assets to be attributed to the schemes and the Morton Vale Pipeline. Seqwater has used depreciation costs as a proxy for the costs associated with use of these assets. However, these depreciation costs are not captured for the WSS. Accordingly, aggregate non-infrastructure depreciation for 2012-13 has been allocated to WSS on the basis of direct costs. Table 7-9 provides a breakdown of non-infrastructure asset costs allocated to each scheme and the Morton Vale Pipeline.

Table 7-9. Non-infrastructure costs – 2012-13 ($2012-13, $000)

WSS	Depreciation cost
Logan River	28.1
Central Brisbane River	361.4
Mary Valley	32.3
Warrill Valley	44.5
Lower Lockyer	33.5
Central Lockyer	19.6
Cedar Pocket	3.7
Pie Creek	7.5
Morton Vale Pipeline	2.6
Total	**533.2**

Insurance

Seqwater's annual insurance premium cost for the entire business for 2012-13 is forecast at $6.96 million. The major components to the premium include industrial special risks, machinery breakdown, public liability, professional indemnity, contract works and directors and officers insurance.[73]

Seqwater is in the process of placing insurances, and proposes to update this forecast once new premiums are set. While Seqwater's forecast incorporates its estimate of any savings from a combined premium following the Seqwater-WaterSecure merger as well as expected increases to premium costs, these impacts (as well as changes in the market generally) are difficult to predict. The timeframe for the QCA also enables Seqwater to re-submit premium costs that incorporate better information.

Also, Seqwater notes that such a process was allowed for in the QCA's review of SunWater's irrigation prices.

Seqwater engages the services of a professional broker when procuring insurances, and conducts a competitive process.

Seqwater has allocated its premium to individual schemes and the Morton Vale Pipeline using the replacement value of associated assets. The table below shows how the costs have been allocated using this approach.

[73] Seqwater also notes the QCA canvassed concerns raised by irrigators about the insurance costs attributable to irrigation services, and accepted SunWater's proposed scope of insurances as reasonable (including professional indemnity). Refer to QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. pp 106-107.

Table 7-10. Insurance costs – 2012-13 ($2012-13, $000)

WSS	Insurance cost
Logan River	144.1
Central Brisbane River	691.4
Mary Valley	117.8
Warrill Valley	37.4
Lower Lockyer	64.1
Central Lockyer	142.7
Cedar Pocket	8.9
Pie Creek	9.7
Morton Vale Pipeline	2.4
Total	**1,218.5**

Seqwater notes that SunWater proposed, and the QCA accepted, a differential be applied to the insurance premiums for different asset types. Seqwater acknowledges that a case for a differential within its asset portfolio may exist, and notes that insurance costs in the past for ex-WaterSecure assets have been lower (on a $/insured value basis) than the rest of the portfolio[74]. However, Seqwater is hesitant to propose a differential in the current insurance environment, where significant increases to premium costs are expected which might change or negate any differential that occurred in the past.

Finally, Seqwater submits that the approach adopted by the QCA for allocating insurance costs must be consistent when setting GSCs over the regulatory period.

Working capital

In its draft SunWater report, the QCA recommended that SunWater be allowed to recover the economic cost of maintaining working capital as part of irrigation prices.[75] The QCA set this allowance at 0.9% of forecast revenue for each scheme, multiplied by WACC. In approving this allowance, the QCA recommended that SunWater explore the feasibility of basing future working capital requirements on efficient forecasts of revenue and cash flows from irrigation schemes, rather than relying on historical, whole of business data.

The QCA has already adopted a methodology for calculating Seqwater's working capital in GSCs. Seqwater has calculated the working capital allowance using this methodology and the values submitted to the QCA for 2012-13[76], at $5.538 million.

74 Due to the different risk profiles of the assets.

75 QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. p260.

76 Seqwater (2012). p146

Seqwater has allocated this working capital allowance to schemes and the Morton Vale Pipeline (and to priority groups within schemes) based on the proportion of forecast lower bound revenue.

Table 7-11. Working capital costs – 2012-13 ($2012-13, $000)

WSS	Working capital
Logan River	10.8
Central Brisbane River	128.9
Mary Valley	16.5
Warrill Valley	13.8
Lower Lockyer	10.5
Central Lockyer	11.6
Cedar Pocket	1.0
Pie Creek	1.6
Morton Vale Pipeline	0.1
Total	**194.8**

Total non-direct operating costs

Total non-direct operating costs for 2012-13 are provided in Table 7-12 below.

Table 7-12. Total non-direct operating costs – 2012-13 ($2012-13, $000)

WSS	2012-13
Logan River	456.6
Central Brisbane River	7,083.7
Mary Valley	481.7
Warrill Valley	500.9
Lower Lockyer	380.1
Central Lockyer	259.3
Cedar Pocket	105.4
Pie Creek	224.9
Morton Vale Pipeline	30.8
Total	**9,523.47**

7.5 Variable costs

Seqwater has proposed a variable charge for the Pie Creek tariff group. This charge is to be set to recover the costs of electricity incremental to water use – that is, the additional electricity cost incurred when a customer takes an additional ML of water.

This variable electricity costs relates to diversions from the Pie Creek Pump Station into a network of channels and pipelines, which also feed supplemented streams in the Pie Creek tariff group.

Seqwater has calculated the average energy required to pump a ML of water at the Pie Creek Pump Station (329kWh/ML), and then applied the 2012-13 variable electricity tariff to determine a cost per ML pumped. [77]

This cost then needs to be adjusted for distribution efficiency, given not all water pumped is delivered via a customer meter. Also, some metered use is not sourced from water pumped, but from natural flows from rainfall into channels or streams.

Accordingly, distribution efficiency has varied widely over time. While Seqwater does not have access to complete records, the information it does have indicates that efficiency can be close to or at 100% (as in recent years due to natural inflows downstream of the pump station) or as low as 49%.

This compares to an implied distribution efficiency from the loss WAE granted in the ROP, of 63%. However, these loss WAE are not granted on the basis of 'average' conditions, but are instead based on an assessment of the loss needs under a variety of scenarios, including very high loss years. That is, Seqwater must hold sufficient loss WAE to be able to meet its obligations to deliver water to customers in worse case or near worse-case scenarios (e.g. when physical losses are very high, and/or announced allocations are very low (reducing the medium priority loss available)).

Given the volatility in distribution efficiencies and the limited historic data, Seqwater has adopted the mid-point between the implied ROP distribution efficiency (63%) and the case where no losses occur (100%). Both extremes are plausible situations, as evidenced by the above information. This mid-point is 82%. [78]

Using the above approach, Seqwater has calculated a variable charge at $55.72 ($2013-14).

7.5 Cost indexation

Seqwater has adopted an approach whereby operating costs are derived for a base year (2012-13) and escalated forward over each year of the regulatory period on the basis of predetermined escalation factors.

Escalation factors have been developed for the following inputs:

- internal labour costs;

[77] This includes assumptions for use under peak and off-peak tariffs. The historic average ratio of 67% peak and 33% off peak was adopted.

[78] This is not to say this mid-point is a measure of 'efficient' distribution loss.

- contractor and materials costs;
- energy costs; and
- other input costs, using a general measure of inflation.

These escalators are applied to the baseline operating expenditure (2012-13). Details of the proposed escalators are provided below.

Internal labour

The current Enterprise Bargaining Agreement (EBA) of 4% for Seqwater extends from 1 July 2009 to 30 June 2012. Seqwater has continued to escalate internal labour costs at 4% per annum for the regulatory period 2013-14 to 2016-17.

This escalation rate is consistent with historic growth in labour costs across Queensland and competing industries (see Table 7-13).[79]

Table 7-13. Labour Price Index – compound average growth rate

Labour price index	Compound average growth rate (%)	
	5 Year	10 Year
Queensland	3.9	3.9
Electricity, gas, water and waste services (Aust)	4.1	4.3
Construction (Aust)	4.1	4.3
Mining (Aust)	4.6	4.5

Source: ABS Cat No. 6345.0 (Tables 2b and 5b), December 2011 data.

In addition, the escalation rate is consistent with the QCA's recent SunWater report and the QCA's consultant reports underpinning the report:

- the QCA's SunWater report sets labour cost growth at 4% over the regulatory period;[80]
- Halcrow indicated that actual movement in the cost of labour, as measured by the growth in both the Labour Price Index for the Electricity, Gas, Water and Waste Services Industry, were above 4% since 2006; and the Labour Price Index for Queensland (for all industries), typically ranged between 3 and 4%;[81] and

[79] In its draft SunWater report the QCA noted that the use of appropriate ABS labour indexes to estimate cost escalation factors represents a reasonable approach given the limited information available on disaggregated cost indexes.

[80] QCA (2011), SunWater Irrigation Price Review: 2012-17 Draft Report Volume 1.

[81] QCA (2011), SunWater Irrigation Price Review: 2012-17 Draft Report Volume 1.

- Deloitte Access Economics noted that a recent report prepared by the business forecast an average increase in the labour costs, facing Queensland's utilities sector, of 4.3% per annum between 2011-12 and 2017-18.[82]

Consistent with these findings, the QCA concluded that:

> *…labour price indexes and other evidence suggest that labour costs in Queensland over the short to medium term are likely to rise by around 4% per annum, and probably more than this in regional Queensland where the continuation of strong growth in the resources sector is likely to maintain upward pressure on labour (and other) costs.* [83]

Contractor costs and Materials

For the regulatory period 2013-14 to 2016-17 contractor and material costs have been escalated at 4% per annum.

This rate is consistent with the QCA's SunWater report. In that report the QCA noted that SunWater's proposal to escalate its direct materials (including chemicals) and contractor costs by 4% per annum was reasonable when compared with ABS Construction Cost Index data. The QCA further noted that increased demand from mining, manufacturing and construction sectors for the materials and contractor services procured by SunWater are likely to result in real increases in the prices of these materials and services over the regulatory period.

The escalation rate is also consistent with historic growth in a number of relevant industry cost indexes over the past 10 years (see Table 7-14).

Table 7-14. Industry Cost Indexes – compound average growth rate

Index	10 Year (%)
Building Construction Index (QLD)	4.9
Non-residential Building Construction Index (QLD)	4.7
Queensland Road and Bridge Index	5.2
Labour Price Index – All Industries (QLD)	3.9
Labour Price Index – Electricity, gas, water and waste services (Aust)	4.3
Labour Price Index – Construction (Aust)	4.3
Labour Price Index – Mining (Aust)	4.5

Source: ABS Cat No. 6427.0 (Table 15) and ABS Cat No. 6345.0 (Tables 2b and 5b), December 2011 data.

82 QCA (2011), SunWater Irrigation Price Review: 2012-17 Draft Report Volume 1.

83 QCA (2011), SunWater Irrigation Price Review: 2012-17 Draft Report Volume 1. p.154.

In addition, a recent report by the Queensland Major Contractors Association suggested that, given existing constraints on labour and equipment, it was very likely that overall construction costs would re-accelerate through the next five years.[84]

Energy costs

Energy costs account for only 3% of the total operating costs of the irrigation water supply schemes.

The QCA in its draft SunWater report recommended that electricity costs be escalated by 7.41% per annum. This forecast was based on a forward looking escalator drawn on the experience of the QCA's electricity Benchmark Retail Cost Index (BRCI) and the known forward decisions of the Australian Energy Regulator (AER).

In addition, the QCA noted that, should SunWater sustain further material cost increases due to unanticipated electricity tariff rises over the regulatory period, the QCA proposes to address this via consideration of a cost past through or end of period adjustments.

Changes in electricity costs are very difficult to forecast, for example, the BRCI has shown considerable volatility over recent years and the introduction of the carbon tax introduces further uncertainty.

Electricity tariff increases represent risks that are beyond Seqwater's control. While Seqwater may have limited control over the energy component of prices (for contestable electricity contracts), through prudent procurement practices, it still bears the risks of changes to network charges.

Electricity costs for irrigation supplies largely relate to pumping water into off-stream storages. The duration and frequency of these events and consequently their costs are very difficult to forecast as they are influenced by streamflow events and storage levels. Indeed in some years no pumping may occur, while in others there may be significant pumping events and costs.

Given the difficulty in forecasting pumping (and electricity consumption) and changes in electricity prices, and that electricity costs represent a relatively small proportion of irrigation costs, Seqwater has adopted a conservative forecast with a proposed settlement at the end of the regulatory period to reflect the actual costs incurred.

Forecasts also apply to the variable charge at Pie Creek, where tariffs will increase over the regulatory period affecting the variable cost of supply.

Given the difficulties associated with forecasting electricity costs, it is proposed that electricity costs be escalated by CPI (2.5%) for the regulatory period (from 2013-14) with adjustment

[84] Queensland Major Contractors Association (2012), 2012 Major Projects Report, February.

required to account for the actual pumping and electricity costs at the end of the regulatory period.

Seqwater would maintain a running balance across the price path with a revenue neutral 'unders and overs' adjustment applied to prices for the next price path to account for the difference between forecast and actual electricity costs.

This approach recognises that Seqwater should not bear the cost risk to the extent it is unable to manage those risks, particularly in a lower bound cost recovery environment.

The proposed adjustment to water charges to reflect differences in forecast and actual electricity prices is consistent with the Ministerial Referral Notice. Specifically, under the Notice, Seqwater is permitted to recover its efficient electricity costs.

The approach is also consistent with the QCA's view of cost pass throughs. In particular, in its SunWater report the QCA noted that a cost pass through may be appropriate when the nature of costs can be reasonably foreseen (but not quantified in advance) and the cause of the subsequent change and its magnitude (once it has occurred) are unambiguous.

Inflation

It is proposed that forecast inflation be based on the mid-point of the Reserve Bank of Australia (RBA) medium-term inflation target range. The current RBA inflation target range is 2-3%; hence the mid-point is 2.5%.

The proposed escalation is the same as that recently approved by the QCA in its SunWater report.[85] In that report, the QCA approved a general inflation rate of 2.5% for the forecast period. Similarly, in its review of the Gladstone Area Water Board the QCA adopted an estimated inflation rate of 2.5% based on the mid-point of the RBA's inflation target range.[86]

7.6 Total Operating cost forecasts

Table 7-15 provides total operating costs for 2012-13 and the 2013-17 forecast period for each scheme and the Morton Vale Pipeline.

Table 7-15. Total operating costs 2012-13 to 2016-17 ($000, nominal)*

WSS	2012-13	2013-14	2014-15	2015-16	2016-17
Logan River	1,026.5	1,091.9	1,126.6	1,162.5	1,227.1
Central Brisbane River	14,418.9	15,049.9	15,523.4	16,066.3	16,517.9

85 QCA (2011). SunWater Irrigation Price Review: 2012-17 Volume 1. November.

86 QCA (2010). Gladstone Area Water Board: Investigation of Pricing Practices - Final Report. June.

Mary Valley	1,137.9	1,159.3	1,195.3	1,259.5	1,271.0
Warrill Valley	1,404.2	1,504.3	1,553.1	1,603.5	1,683.2
Lower Lockyer	1,059.8	1,208.7	1,220.2	1,258.6	1,298.3
Central Lockyer	656.5	784.6	835.1	833.8	887.2
Cedar Pocket	181.4	130.5	134.9	139.4	171.8
Pie Creek	377.3	240.1	248.2	256.7	265.4
Morton Vale Pipeline	84.2	87.2	90.2	93.3	96.5
Total	**20,346.8**	**21,256.5**	**21,927.0**	**22,673.6**	**23,418.5**

** Less revenue off-sets*

7.7 Allocation of operating costs to WAEs

Following the determination of scheme operating costs, a further allocation of fixed costs is necessary to determine costs associated with different priority groups (medium and high) within the schemes. Variable costs are meant to reflect the costs that change with water use, and hence do not need to be allocated to priority type.

It is proposed that Seqwater adopt the same approach to the allocation of fixed costs to entitlement groups as that recommended by the QCA in its SunWater report.

In that report, the QCA recommended that fixed costs be allocated between different water entitlement priority groups on the basis of:

- HUFs for fixed preventive and corrective maintenance costs; and
- 50% using HUFs and 50% using current nominal WAEs[87] for fixed operations costs.[88]

In its draft SunWater report, the QCA allocated insurance premium costs in water supply schemes based on the HUF, and in distribution systems according to nominal WAEs.[89] Seqwater has adopted the same approach as the draft report, but notes the QCA adopted a different approach in its Final Report, being 50% HUF and 50% WAE.

The development of the HUFs, including a discussion of the alternative measure applied in the Central Brisbane River, is discussed in Chapter 6 and a copy of the associated PB report is provided at Attachment 3.

87 Nominal WAE equals the percent of the nominal medium priority WAE to the total nominal WAE in the scheme, unadjusted.

88 The QCA considered that fixed operations costs that are asset-related should be allocated on the basis of HUF, while fixed operations costs that are more related to service provision are allocated based on a nominal WAE. However, given operating costs are not disaggregated in this way, the QCA recommended a 50:50 allocation based on the two methods.

89 QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. p244.

Nominal WAEs associated with each of the schemes are presented in Table 7-16 below.

Table 7-16. Water Access Entitlements

Scheme	WAE			
	Medium (ML)	High (ML)	Total (ML)	Nominal WAE (%)
Central Lockyer	16,315	184	16,499	98.9
Lower Lockyer	11,278	-	11,278	100.0
Logan River	13,554	9,856	23,413	57.9
Warrill Valley	20,536	9,450	29,986	68.5
Mary Valley	21,829	10,264	32,093	68.0
Pie Creek	835	-	835	100.0
Cedar Pocket	495	-	495	100.0
Central Brisbane River	7,041	279,000	286,041	2.5

The table below presents the percentages to allocate maintenance and operating costs to medium priority WAE in each scheme. In all cases, the HUF adopted was based on the 15 year drought period, as per the approach approved for SunWater.

This shows that maintenance costs for three of the seven WSSs are based on the HUF, and Central Brisbane River WSS is based on the adjusted ratio as discussed in Chapter 6. In three schemes, all WAE is medium priority and hence those WAE attract 100% of maintenance and operating costs. In the Central Lockyer, nominal WAE % is used given high priority is negligible and WAE have not been formalised in the scheme.

Remaining operating costs for the Logan River, Warrill Valley and Mary Valley schemes are allocated on the basis of the 50:50 HUF/nominal WAE attribution recommended by the QCA. Similarly, remaining operating costs for the Central Brisbane River WSS are allocated based on a 50:50 split between the adjusted asset utilisation factor and the nominal WAE.

Table 7-17. Proposed allocation percentages for medium priority WAE

Scheme	Maintenance		Other operating costs	
	Method	Allocation to medium priority	Method	Allocation to medium priority
Central Lockyer	Nominal WAE%	98.9%	Nominal WAE%	98.9%
Lower Lockyer	None required	100.0%	None required	100.0%
Logan River	HUF	16.0%	50% HUF, 50%	36.9%

			Nominal WAE	
Warrill Valley	HUF	11.0%	50% HUF, 50% Nominal WAE	39.7%
Mary Valley	HUF	26.0%	50% HUF, 50% Nominal WAE	47.0%
Pie Creek	None required	100.0%	None required	100.0%
Cedar Pocket	None required	100.0%	None required	100.0%
Central Brisbane River	Adjusted ratio of MP to HP	2.1%	50% adjusted ratio, 50% Nominal WAE	2.3%

Applying these percentages to the total operating costs outlined above results in the following operating costs being allocated to medium priority customers in each WSS.

Table 7-18. Allocation of operating costs to medium priority WAE ($000, nominal)

WSS	2013-14	2014-15	2015-16	2016-17
Logan River	348.8	359.9	371.4	393.4
Central Brisbane River	342.2	352.9	365.3	375.5
Mary Valley	475.2	489.8	517.4	520.3
Warrill Valley	497.3	512.8	528.8	556.3
Lower Lockyer	1,208.7	1,220.2	1,258.6	1,298.3
Central Lockyer	775.9	825.8	824.5	877.3
Cedar Pocket	130.5	134.9	139.4	171.8
Pie Creek	240.1	248.2	256.7	265.4
Morton Vale Pipeline	87.2	90.2	93.3	96.5
Total	**4,105.8**	**4,234.7**	**4,355.4**	**4,554.8**

Chapter 8 - Lower bound costs

Based on the preceding analysis, lower bound cost estimates for each of the WSS and the Morton Vale Pipeline for the forecast period are provided in Table 8-1 below.

Table 8-1. Lower bound costs for WSS and Morton Vale Pipeline ($000, nominal)*

Cost	2013-14	2014-15	2015-16	2016-17
Operating costs				
Direct	11,494.9	11,921.3	12,417.8	12,906.3
Non-direct	9,761.6	10,005.6	10,255.8	10,512.2
Renewals	0.0	0.0	0.0	0.0
Totals	**21,256.5**	**21,927.0**	**22,673.6**	**23,418.5**

** Includes revenue offset*

Lower bound cost forecasts for each of the schemes are provided below.

Table 8-2. Lower bound costs for schemes ($000, nominal)

Cost	2013-14	2014-15	2015-16	2016-17
Logan River	1,239.9	1,277.0	1,313.2	1,378.3
Central Brisbane River	16,080.8	16,555.1	17,174.2	17,977.6
Mary Valley	1,651.3	1,688.1	1,756.0	1,770.2
Warrill Valley	1,712.0	1,765.8	1,818.7	1,899.3
Lower Lockyer	1,426.1	1,441.9	1,480.8	1,521.3
Central Lockyer	1,085.1	1,139.6	1,140.4	1,195.5
Cedar Pocket	144.5	149.0	153.7	186.0
Pie Creek	304.3	313.1	321.6	330.5
Morton Vale Pipeline	2.6	5.6	8.8	12.1
Total	**23,646.7**	**24,335.2**	**25,167.5**	**26,270.7**

Details of costs for each tariff group are provided in the attached NSPs.

8.1 Lower bound costs attributable to medium priority

Irrigation customers hold medium priority WAE (or equivalent). Accordingly, lower bound costs need to be allocated to medium priority WAE.

As outlined in Chapters 6 and 7, Seqwater has adopted the same approach to assigning costs between priority groups as the QCA's recommendations for SunWater. The resulting lower bound cost forecasts for medium priority WAE for the regulatory period are provided in Table 8-3.

Table 8-3. Lower bound costs for medium priority WAE ($000)

Cost	2013-14	2014-15	2015-16	2016-17
Operating costs				
Direct	2,393.0	2,479.1	2,555.9	2,710.3
Non-direct	1,712.8	1,755.6	1,799.5	1,844.4
Renewals	704.8	714.9	720.8	731.9
Totals	**4,810.6**	**4,949.6**	**5,076.1**	**5,286.6**

Total lower bound costs for medium priority WAE in each of the irrigation tariff groups are provided below. Lower bound costs estimates prepared in the previous 2006 review have been provided where possible, for comparison. These prior lower bound cost estimates have been indexed forward by actual and forecast inflation.

As discussed, limited information provided in the 2006 price review, makes it difficult to determine the comparability of the lower bound cost forecasts to those produced by Seqwater. Nevertheless, the SunWater forecasts provide an indication of the differential with Seqwater forecasts.

Table 8-4. Lower bound costs for medium priority – by tariff group ($000, nominal)

Tariff group	2006 SunWater LBC ($2013-14)	2013-14	2014-15	2015-16	2016-17
Logan River	358.0	372.5	384.0	395.5	417.6
Central Brisbane River	na	364.3	375.1	389.1	406.8
Mary Valley	na	603.1	617.9	646.5	650.0
Warrill Valley	588.3	520.1	536.2	552.4	580.0
Lower Lockyer	1,011.8	1,426.1	1,441.9	1,480.8	1,521.3
Central Lockyer	1,250.6	1,073.0	1,126.9	1,127.7	1,182.1
Morton Vale Pipeline	*	2.6	5.6	8.8	12.1
Cedar Pocket	na	144.5	149.0	153.7	186.0
Pie Creek	na	304.3	313.1	321.6	330.5
Total		**4,810.6**	**4,949.6**	**5,076.1**	**5,286.6**

** Included in Central Lockyer*

For those tariff groups where SunWater lower bound cost information is available, the data suggests that Seqwater lower bound cost estimates are lower than comparable SunWater costs for Warrill Valley and Central Lockyer, but higher for Logan River and Lower Lockyer.

Further details of lower bound costs for each tariff group are provided in the attached NSPs.

Chapter 9 - Lower bound reference tariffs

The Referral Notice requires the QCA to recommend prices that recover efficient lower bound costs. These costs can be derived as the sum of the operating and renewals costs attributable to medium priority WAE, divided by those WAE.

9.1 Proposed lower bound cost base

Total lower bound costs for each of the irrigation tariff groups are provided in Table 9-1.

Table 9-1. Lower bound cost by tariff group ($000, nominal)

Tariff group	2013-14	2014-15	2015-16	2016-17
Logan River	372.5	384.0	395.5	417.6
Central Brisbane River	364.3	375.1	389.1	406.8
Mary River*	603.1	617.9	646.5	650.0
Warrill Valley	520.1	536.2	552.4	580.0
Lower Lockyer	1,426.1	1,441.9	1,480.8	1,521.3
Central Lockyer	1,073.0	1,126.9	1,127.7	1,182.1
Cedar Pocket	2.6	5.6	8.8	12.1
Pie Creek	144.5	149.0	153.7	186.0
Morton Vale Pipeline	304.3	313.1	321.6	330.5
Total	**4,810.6**	**4,949.6**	**5,076.1**	**5,286.6**

9.2 Proposed lower bound reference tariffs

The proposed lower bound reference tariffs for each of the tariff groups have been prepared on the basis of associated lower bound costs. The actual prices charged to irrigators over the regulatory period will be subject to the requirements of the Referral Notice.

Fixed and variable costs

The QCA's SunWater report recommended that short term volume risk should be assigned to customers through a tariff structure that recovers fixed costs through fixed charges and variable costs through variable charges. Seqwater considers that none of its costs vary proportional to water demand, except for Pie Creek (refer Chapter 7). On this basis, Seqwater has proposed that all tariffs (with the exception of Pie Creek) consist of a single fixed charge.

Scheme-specific pricing issues

Seqwater has nominated a single tariff group for six of the seven WSS, and for the Morton Vale Pipeline. An additional tariff group, Pie Creek, is to continue in the Mary Valley WSS. An interim

volumetric charge is also required in the Central Lockyer WSS. The proposed pricing treatment for these tariffs is discussed below.

Interim volumetric charge – Central Lockyer WSS

Chapters 3 and 4 discussed the absence of WAE issued at an individual level for most irrigators in the Central Lockyer WSS, namely all irrigators excluding those on the Morton Vale Pipeline:

- 3,115ML of Risk A and Risk B WAE; and
- 9,335ML of medium WAE.

In Chapter 4, Seqwater submitted that a volumetric charge should apply alongside a revenue cap (with an unders and overs adjustment) in that scheme for the above WAE, for so long as those WAE remain unissued to individuals. While this is not a desirable tariff structure, there is no option but to apply a volumetric charge in the current circumstances. To date, these irrigators have only paid the Part B (volumetric) charge, and have not paid the fixed charge. Moreover, Seqwater has not received any CSO funding for the fixed charge revenue.

This situation is not sustainable into the next regulatory period, as it fails to achieve recovery of lower bound costs. Instead, the volumetric charge should be set to recover the same revenue that would have occurred under the fixed charge. This requires a forecast of annual water use until such time as WAE are established.

Seqwater notes that in the draft SunWater report, the QCA forecast water use for the purpose of setting a volumetric charge. This forecast was based on historic data, being the prior 8-years water use with the removal of three anomalous years in that series – effectively the average of five years.[90]

Seqwater has calculated average water use for medium priority, Risk A and Risk B from the start of the current price path, and the 9 years to December 2011.

The average annual usage comparison to forecast usage for Central Lockyer medium priority groundwater, Risk A and Risk B is set out in the table below:

Table 9-2. Average annual usage – Central Lockyer

Forecast annual usage for 2006-11 price path	8,096 ML/annum
Average actual annual usage for 2006-11 price path	2,645 ML/annum
Average actual annual usage for 9 years to December 2011	3,935 ML/annum

Seqwater notes the QCA's preference to adopt long-term (rather than short-term) averages when calculating water use. Seqwater also notes that the longer, nine-year average is above the short-

[90] QCA (2011). SunWater Irrigation Price Review: 2012-2017. Draft Report. pp 302-303.

term average, but well below the forecast used for the 2006 prices. This average is 32% of the WAE that have not been attributed.[91]

On balance, Seqwater submits that the interim volumetric charge for the Central Lockyer medium priority, Risk A and Risk B WAE is based on the nine-year average (32% use of WAE).

This results in the following interim volumetric tariffs.

Table 9-3. Central Lockyer interim variable tariff - $/ML ($nominal)

Tariff Group	2013-14	2014-15	2015-16	2016-17
Central Lockyer				
Interim variable tariff based on usage	210.50	215.76	221.15	226.68

Under the proposed revenue cap arrangements, an end of period adjustment would occur with prices in the next regulatory period incorporating the difference between forecast and actual revenue.

Pie Creek

The Pie Creek section of the Mary Valley WSS is a discrete, additional part of the scheme but is also integrated within the Mary Valley WSS in terms of hydrology (for example, the water sharing rules are common for Pie Creek and other Mary Valley WSS customers). Customers outside Pie Creek receive no benefit from the Pie Creek supply infrastructure, which involves no storage assets. That is without the Pie Creek part of the scheme, other customers would be no worse off.

The pricing practices to date i.e. under the prior SunWater ownership, have been to attribute the costs of Pie Creek solely to Pie Creek users, in addition to their share of the remaining Mary Valley WSS costs (i.e. Borumba Dam and Imbil Weir, the infrastructure comprising the tariff groups nominated is set out in Chapter 3).

Seqwater proposes to continue the past practice, and has calculated prices accordingly but on a more transparent, unbundled basis.

Unbundling

Seqwater proposes that prices set in the Morton Vale Pipeline and Pie Creek tariff groups are 'unbundled' from their parent WSS. This means that the costs of the Morton Vale Pipeline and Pie Creek segment are recovered through a separate, cost reflective price. This is a departure from past practice where bundled tariffs were set, and the individual components of cost were not transparent. This unbundling approach is consistent with that endorsed by the QCA in its review of SunWater irrigation tariffs.

[91] That is, 3,935ML out of 12,450ML unattributed.

Consequently, customers in Pie Creek and Morton Vale will pay a discrete tariff for each segment, which will comprise:

- A Part A and B tariff, recovering the fixed and variable costs of the parent WSS respectively; and
- A Part C and D for Morton Vale and A1 and B1 for Pie Creek, recovering the fixed and variable costs of the specific distribution system/ segment respectively.

This structure and terminology is consistent with that applied by the QCA for SunWater.

Lower bound prices

Seqwater has calculated lower bound prices based on the proposed lower bound costs above and the cost-reflective tariff structure set out in Chapters 4 and 5. The proposed lower bound prices have also been smoothed across the 4-year regulatory period.

Proposed tariffs by tariff group are provided in Table 9-4. As discussed, all tariffs (except for Pie Creek) consist of a single fixed charge.

The cost to a customer is calculated by multiplying the customers' WAE by the associated fixed tariff (parts A and C/A1 where applicable) and their metered use by the variable charge (parts B and D/B1 where applicable).

It is proposed that those customers in Central Lockyer yet to be assigned individual WAEs be charged on the basis of a variable only charge, until individual WAE are granted.

Table 9-4. Proposed tariffs by tariff group - $/ML ($nominal)

Tariff Group	Part	2013-14	2014-15	2015-16	2016-17
Cedar Pocket					
Fixed component based on WAE	A	306.07	313.72	321.57	329.61
Variable component based on usage	B	0	0	0	0
Central Brisbane River					
Fixed component based on WAE	A	52.44	53.75	55.09	56.47
Variable component based on usage	B	0	0	0	0
Central Lockyer					
Where WAE are issued or defined for individual customers					
Fixed component based on WAE	A	66.53	68.19	69.90	71.65
Variable component	B	0	0	0	0

Tariff Group	Part	2013-14	2014-15	2015-16	2016-17
based on usage					
Morton Vale Pipeline additional fixed component based on WAE	A1	5.45	5.58	5.72	5.87
Morton Vale Pipeline additional variable component based on usage	B1	0	0	0	0
Where WAE have not been issued or defined for individual customers (interim)					
Fixed component based on WAE	A	0	0	0	0
Variable component based on usage	B	210.50	215.76	221.15	226.68
Logan River					
Fixed component based on WAE	A	27.85	28.54	29.26	29.99
Variable component based on usage	B	0	0	0	0
Lower Lockyer					
Fixed component based on WAE	A	125.39	128.52	131.73	135.03
Variable component based on usage	B	0	0	0	0
Mary Valley					
Fixed component based on WAE	A	27.77	28.46	29.17	29.90
Variable component based on usage	B	0	0	0	0
Pie Creek additional fixed component based on WAE	A1	387.49	397.18	407.11	417.28
Pie Creek additional variable charge based on usage	B1	55.72	57.11	58.54	60.00
Total Pie Creek fixed component based on WAE	A+A1	415.26	425.64	436.28	447.18
Total Pie Creek variable charge based on usage	B+B1	55.72	57.11	58.54	60.00
Warrill Valley					
Fixed component based on WAE	A	25.63	26.27	26.93	27.60
Variable component based on usage	B	0	0	0	0

The table below provides a comparison against the lower bound prices established in the 2006 price review, indexed to 2013-14.

Table 9-5. Lower bound reference tariffs – proposed compared to 2006 SunWater ($2013-14)

	Logan River	Mary Valley	Warrill Valley	Lower Lockyer	Central Lockyer	Cedar Pocket	Pie Creek (bundled)	M'Vale Pipeline (bundled)
SunWater equivalent fixed charge $/ML	25.67	23.00	27.84	87.80	57.21	99.13	288.69	72.06
Seqwater lower bound fixed charge $/ML	27.85	27.77	25.63	125.39	66.53	306.7	415.26	71.98
Change $	7.25	12.31	2.05	49.76	29.2	189.47	148.27	30.23
Change %	28.2	53.5	7.4	56.7	51.0	191.1	51.4	42.0

Note: No prices were previously applied to the Central Brisbane tariff group.

The equivalent SunWater tariffs are based on estimated 2006-07 lower bound costs and forecast water use provided in the 2006 price review. These tariffs are not directly comparable to the Seqwater tariffs but provide an indication of the differential between Seqwater lower bound reference tariffs and the reference tariffs developed in 2006 for the SunWater price review.

Except for Warrill Valley and Morton Vale, the tariffs proposed by Seqwater for 2013-14 are higher than comparable SunWater lower bound tariffs set in 2006. Limitations in the SunWater cost data mean that determining the cause of tariff differentials is not possible.

Adequacy of current prices

The Referral Notice states that where current prices already recover lower bound costs, then they are to be maintained in real terms. Where price increases are required, the QCA is to consider a price path or apply a price path consistent with the 2006 SunWater review.

Current irrigation tariffs consist of a fixed and variable component. To provide an indication of the adequacy of current prices to meet proposed lower bound costs, tariffs for 2012-13 have been converted to a single fixed tariff.[92] This process involved converting the variable component of tariffs to a fixed charge based on forecast usage provided in SunWater's 2006 Tier 1 report.

A comparison of the relevant 2012-13 and proposed 2013-14 tariffs is provided below.

[92] The analysis compares tariffs rather than revenues. Note historic water use for tariff groups has been largely lower than that forecast in 2006.

In the 2006 process, six of the eight tariff groups did not recover the lower bound costs. Instead, price increases were applied at a maximum rate of $10/ML (real) over the 5-year price path. A CSO was paid for the shortfall. Hence a gap already existed in most of the tariff groups between prices and lower bound cost recovery. The Warrill Valley and Logan WSSs were found to be sufficient to recover irrigation's share of lower bound costs at the time.

No tariffs are currently applied to Central Brisbane irrigation customers. The preceding analysis indicates that a fixed tariff of $56.42/ML is required to achieve associated lower bound cost recovery.

Table 9-6. Adequacy of current prices to meet 2013-14 lower bound costs

	Logan River	Mary Valley	Warrill Valley	Lower Lockyer	Central Lockyer	Cedar Pocket	Pie Creek*	M'vale Pipeline *
2012-13 equivalent fixed tariff $/ML	32.85	22.37	31.25	34.97	33.76	22.40	58.03	31.39
Seqwater lower bound fixed charge $/ML	27.85	27.77	25.63	125.39	66.53	306.7	415.26	71.98
Real price increases required in 2006	Likely	Yes	No	Yes	Yes	Yes	Yes	Yes

Note: No prices were previously applied to the Central Brisbane tariff group. For comparison purposes, only the fixed tariff for Central Lockyer customers is provided.

** Bundled price for comparison purposes.*

The table above suggests that:

- the current prices for Warrill Valley and Logan River are already above those required to recover lower bound costs. This is consistent with the outcomes from the 2006 SunWater review;
- prices in Central Brisbane will need to be introduced;
- despite meeting the SunWater 2006 lower bound reference tariff during the last price path, further modest increases in the Mary Valley tariff group are required to meet the forecast lower bound costs for 2013-14 and beyond;
- prices in the other tariff groups, which did not reach lower bound cost recovery in the 2006 price path, remain below the required level of cost recovery and real price increases are required; and

- as a consequence of a large surplus balance in the Asset Restoration Reserve, the Morton Vale tariff group Part C charges are insufficient to recover operations and maintenance outlays. This will require further consideration.

9.3 Price paths

The Referral Notice requires that any prices rises for customers already above lower bound costs be restricted to increases in inflation. This will apply to the Warrill Valley, and is also likely to apply to the Logan River, tariff groups.

For the Central Lockyer, Lower Lockyer Valley, Pie Creek and Cedar Pocket tariff groups, the Referral Notice requires the QCA to apply real increases at a pace consistent with the 2006-11 price path period, until the lower bound reference tariffs are reached. For the 2006-11 price paths, the pace of real price increase was:[93]

- a minimal increase in the first year of the 5-year price path;
- a maximum increase of $10/ML over the 5 year period; and
- a maximum increase of $2.50/annum over the last four years of the price path.

The Referral Notice also requires the QCA to recommend a price path where a real increase is required. Accordingly, Seqwater expects the QCA will also recommend a price path for Central Brisbane and Mary Valley tariff groups. To the extent that the QCA implements price paths for those prices below forecast lower bound, Seqwater considers that the QCA should recommend how any shortfall between forecast and actual revenue received by Seqwater during the regulatory period should be recovered. If the QCA is to recommend price paths that do not achieve lower bound cost recovery (for example a price path that is not NPV neutral), then it should be satisfied that Seqwater will be able to recover the shortfall under an extension of the existing CSO arrangements.

[93] SunWater (2006). Statewide Irrigation Pricing Working Group. Teir 1 Report (p9).

Attachment 1- Seqwater team summaries as at April 2012

Office of the Chief Executive Officer

Support the Board and Executive Management. Oversight and facilitation of Board functions. Undertake formalities required under legislation, Grid Contracts and otherwise in accordance with Delegations Manual. Manages ASIC reporting for subsidiary entities.

The key functions of the Office of the Chief Executive Officer include:

- Board functions and oversight;
- Undertake formalities from legislation, Grid Contracts, Delegations Manual and other instruments;
- Corporate counsel; and
- ASIC reporting.

Organisational Development Group

Corporate and Community Relations

To provide internal and external communication services to ensure Seqwater staff as well as the community are informed of the organisation's goals, initiatives and activities. This function includes liaison with owners and other external stakeholders including the media. The Community Education program is also part of this function. (This team has been created after the merger and was previously two separate teams called Corporate Relations and Community Relations).

The key functions of the Corporate and Community Relations team include:

- Internal and external communications and stakeholder engagement;
- Public safety campaigns relating to dam and weir use;
- Support for Water Grid community team managing Ministerial, media and community information requests;
- Water Grid community education functions;
- Annual Report;
- Flood communications and the Early Warning Network; and
- On-going development and maintenance of website and intranet.

Strategy and Sustainability

To ensure Seqwater's annual operational planning complies with Government regulation and supports a clear long-term direction for business sustainability. The function is responsible for undertaking strategic analysis including environmental scanning, development of Strategic Planning and Operational Planning processes, developing and implementing reporting arrangements against the business plans for both internal and external audiences and co-ordinating the implementation of a sustainability charter.

People and Culture

To design and deliver a full suite of services and programs to enhance people's availability and capability to deliver the strategic and operational objectives of the business. Includes people availability (resourcing) and capability (knowledge and skill) and covers all people-related functions including Learning and Development, Organisational Development, Human Resources, Industrial Relations, HR Information System and metric reporting.

Workplace Health and Safety

To ensure Seqwater has WH&S systems and processes that comply with Workplace Health and Safety legislation and other requirements and that these systems facilitate the management of WH&S risk within Seqwater's business and operations. In addition to compliance, this function is responsible for the development and implementation of WH&S training; WH&S systems accreditation and WH&S Safety culture via initiatives (e.g. Fit for Work and Health and Wellbeing programs)

Process Improvement

Increase the capability of Seqwater to perform its core processes and functions, facilitating efficiency gains across the business. This function is delivered through leading process improvement (PI) projects, undertaking process capability assessments to baseline process capability and setting targets. The function also manages the controlled document repository, maintains the organisations external certifications and undertakes Quality and Environmental Certification audits.

Business Services Group

ICT Services

The ICT group is accountable for establishing, developing and maintaining the framework and delivery of information technology (IT) services across Seqwater and ensuring that Seqwater's Strategic Goals and ICT objectives are achieved.

The key functions of the ICT Services team include:

- ICT Service Desk;
- Server Infrastructure;
- Network Infrastructure;
- Architecture;
- Applications;
- Client Services; and
- Project Management Office.

Finance

The Finance Team is responsible for overseeing Seqwater's financial functions and obligations. This includes the management of debt and cash flows as well as Seqwater's financial accounting and reporting obligations.

The key functions of the Finance team include:

- Management accounting – budget preparation, regulatory reporting, monthly management reporting and system management;
- Financial reporting – tax, external audit, statutory accounts, policy advice, external reporting and depreciation;
- Transaction management – accounts payable and receivable and cash reconciliation;
- Debt and cash management – cash flow modelling, cash management policy and debt facilities;
- Payroll functions; and
- Irrigation business services.

Economic Regulation

Management of the organisation's economic regulatory obligations. Coordinating Seqwater's submissions to the QCA for the pricing of SEQ Water Grid services. Ongoing advice to other work groups on economic regulatory issues, as well as business improvement processes and the management of regulatory risk. Corporate finance modelling services for internal and external reporting.

The key functions of the Economic Regulation team include:

- Economic and Regulatory Pricing and Reporting; and
- Corporate finance modelling.

Property and Facilities

Property Management and administration of the Property portfolio on behalf of Seqwater.

The key functions of the Property and Facilities team include:

- Facilities – Management and administration of Accommodation Facilities and CBD built assets on behalf of Seqwater and affiliated entities;
- Fleet – Management and administration of mobile plant and fleet assets;
- Property;
- Landlord activities associated with 240 Margaret St (unregulated);
- Fleet; and
- Facilities.

Procurement

To assist Seqwater to achieve best value outcomes for each dollar spent with external parties.

The key functions of the Procurement team include:

- Strategic Sourcing;
- Tendering;
- Contract Management;
- Purchasing, Logistics;
- Inventory Management;

- Procurement/Systems Training;
- Procurement Systems Management; and
- Supplier Management.

Legal and Risk

The Legal and Risk Team is responsible for overseeing all of Seqwater's legal, insurance and risk functions and obligations.

The key functions of the Legal and Risk team are summarised below.

Legal roles

- Service delivery;
- Built Assets –construction related matters;
- Natural Assets –including all property and recreational matters;
- Environmental –the highly regulated product of water both in its natural and manufactured form. This role works with the water delivery and TWAD team but also works closely with the compliance, risk and insurance teams; and
- Claims – to manage potential and actual claims and litigation and deliver commercial and constructive outcomes that suit the risk profile and strategic direction of Seqwater.

Risk roles

- BCPs;
- Fraud risk management;
- Critical infrastructure protection;
- Providing advice on risk activities across the organisation (e.g. projects, procurement);
- Facilitation of organisational risk monitoring i.e. Strategic, Corporate, Operational; and
- Education and training.

Insurance roles

- Claims management;
- Insurance renewal; and

- Brokerage management

Projects

The Business Services Projects team manages projects that generally impact functions across Seqwater. The majority of projects involve liaison and negotiation with three Distribution/Retail entities, LinkWater and/or the Water Grid Manager. Projects usually involve infrastructure ownership and associated property issues or commercial matters.

A current project for the team is the compliance activities relating to the Market Rules such as ensuring compliance with all metering standards.

Governance and Compliance

To provide oversight and leadership in Seqwater's corporate governance and compliance programs including establishing the appropriate frameworks & programs, reporting, monitoring and ongoing improvement.

The key functions of the Governance and Compliance team include:

- Ensuring the organisation has systems and processes to enable adherence to the State Water Authorities Governance Framework issued by Queensland Treasury and other sound governance practices. To ensure the organisation's compliance program is sound and operating effectively in line with the requirements set out in the Australian Compliance Standard (AS3806). This includes leadership and oversight of the Corporation's Assurance program including Internal Audit, Policy Framework and Board approved delegations;
- Management of compliance framework including compliance in relation to legislation, regulation, contracts and leases; and
- Dealing with compliance breaches, systems weaknesses and resulting internal audit scoping.

Records and Information

To develop, implement and maintain a Records and Information Management Program to support Seqwater business through:

- Sound and sustainable information and records management systems and practices which assist in the capture and maintenance of corporate memory;

- Provision of specialist advice;
- Improvement in the availability and accessibility of information across the organisation; and
- Promotion of a Seqwater culture of quality recordkeeping; and ensuring compliance.

Asset Delivery Group

Integrated Asset Planning

Responsible for the portfolio level master planning for Seqwater's catchment based assets. This includes regional, sub-regional and individual asset planning up to a 30 year horizon. The master planning process verifies needs of the business and identifies options for major changes to the attributes of our assets which may be required over time. It is also then the responsibility of Integrated Asset Planning to validate the actions required under the master plan as and when they fall due. This process involves the completion or validation of Options Studies and preparation of subsequent Business Cases for approval of capital projects.

The key functions of the Integrated Asset Planning team include:

- Asset portfolio master planning, including regional and sub-regional planning, grid supply planning and integrated asset planning and strategy into the 30 Year Plan;
- Individual asset planning; and
- Developing the business cases underpinning capital projects.

Strategic Maintenance

This team does not deliver the maintenance, but optimises the efficiency of the maintenance activities undertaken, by developing the processes used to identify maintenance requirements, and then implementing those processes through systems (for example the CIS). The group is also responsible for maintenance planning, across the Seqwater's asset portfolio, including for land and recreation assets as well as infrastructure assets, as well as the development of FAMPs, Natural Asset Management Plans (NAMPs) and Recreation Asset Management Plans (RAMPs), as well as compliance auditing.

The key functions of the Strategic Maintenance team include:

- Asset Management Plans for all assets including built and natural assets;

- Scheduled Maintenance Plans;
- Compliance reports; and
- Strategic Maintenance Coordination Forum.

Program Management Office (PMO)

Responsible for supporting the operations of the Asset Delivery Group, by reporting on the program of operational and capital projects, providing project and financial support in the delivery of project outputs to maximize program deliverables, preparing defined budgets for future years' asset management programs and development of financial processes (Purchase Order processes) for project expenditure and ongoing expenditure review. The PMO also provides support functions to the Asset Management program delivery governance functions.

The key functions of the Program Management Office include:

- Program Delivery Governance and Reporting; and
- Program Investment Coordination.

Project Delivery

Responsible for managing each stage of the delivery of capital projects, including project planning, project implementation, project support and project conclusion, for the entire asset portfolio including major capital and operational projects, built asset refurbishment and renewals, and natural asset projects.

The key functions of the Project Delivery team include:

- Provision of strategic project delivery support to the Integrated Asset Planning team during the development phase of capital projects;
- Planning for delivery of full program of capital and major operational renewal projects;
- Detailed project planning for medium/major capital and operational renewal projects;
- Achievement of relevant project approvals for major capital projects that require environmental and planning approvals;
- Engagement and management of engineering consultants in the detailed scoping and design of capital and major operational renewal projects;
- Development of project procurement strategies to maximise value for money outcomes while ensuring efficient program delivery;

- Procurement and management of contractors to execute capital and major operational renewal projects;
- Management of safety and environmental issues in the delivery of projects, in line with relevant standards; and
- Measurement and reporting of progress

Asset Policy and Strategy

Responsible for the development of asset policies and strategies for Seqwater's natural and built asset portfolio (including our broader catchments). This team also plays a key role in liaising with key external stakeholders who regulate or influence the direction for management of Seqwater's asset portfolio. The team also own and manage the asset information and oversee the review of asset investment.

The key functions of the Asset Policy and Strategy team include:

- Incorporate best practice into outputs through considering existing best practices;
- Lead direction-setting for research, 30 year plan and asset management framework development by scoping and articulating outcomes;
- Development, management and maintenance of asset policies and strategies;
- Asset management information services for all assets;
- Activities associated with the alignment of assets, asset management practices, procedures and data management across the asset portfolio;
- Setting the direction for future asset management and ensuring a sufficient, but prudent level of asset investment, including catchment investment; and
- Stakeholder group development and participation for both internal and external stakeholders, with particular focus on key external stakeholders who influence the direction of asset management.

Water Delivery Group

Water Treatment Operations North

The WTP – North Team is responsible for the operation of Seqwater's Northern Water Treatment plants extending from Noosa in the North, Jimna to Lowood in the West and the Northern suburbs of Brisbane.

The Northern Water Treatment Plant Operations is organized into 3 Sub-Regional areas covering Sunshine Coast, Moreton and Somerset Regions and is serviced by 35 Operators, many of which are trained and competent at operating several facilities to ensure the most efficient use of our operational workforce.

The day to day management of these facilities is supported by 1 Team Leader for the Region and 1 Coordinator per Sub-Region.

Water Treatment Operations South

The WTO – South team is responsible for the operation of the Seqwater's southern water treatment plants extending from the western suburbs of Brisbane to Mudgeeraba in the south and to Redland in the east.

The Southern WTPs are organised into 4 sub-regions being Gold Coast, Scenic Rim, Mt Crosby and Redland with 36 Operators, 2 Team Leaders and 4 Sub-Regional Coordinators responsible for managing the day to day operations of the facilities.

Dam Operations

Dam Operations aims to deliver best practice management of dams and water sources while being fully compliant and effective in operating, maintaining and monitoring its water source infrastructure. Dam Operations must meet the regulatory requirements under various Acts including those relating to Dam Safety, Flood Management, Resource Operating Plans, and providing sufficient water to meet standards of service. Key outputs are management of dams to ensure safe operation during normal water releases and flood releases, monitoring and ensuring dam safety compliance, maintain releases from dams to meet demand, meeting resource operation plan compliance, delivering water to irrigation customers, and ensuring water related data is recorded and stored.

The key functions of the Dam Operations team include:

- Dam Operations and Management;
- Dam Safety Compliance;
- Management of Dam Releases;
- ROP Compliance;
- Irrigation Supply Services;
- Water Data Records and Storage; and
- Some unregulated activities associated with operations of hydroelectric plants.

Infrastructure Maintenance

The delivery of scheduled, planned and reactive maintenance of Seqwater's assets in a timely, effective and efficient manner that supports water production. To ensure the reliability of Seqwater Electrical, Mechanical, Civil and Control System assets and meet all compliance obligations.

Water Quality and Environment

The Water Quality team manages and implements the overarching global water quality for Seqwater, and ensures they are aligned with the expectations of key stakeholders. This team is responsible for lab services, data management, implementation of drinking water management plans and environmental compliance.

The key functions of the Water Quality and Environment team include:

- Catchment Water Quality;
- Drinking Water Quality;
- Environmental Management Unit; and
- Scientific Laboratory Services and Data Systems.

Group Support and Catchment Services

This work team has responsibility for the development and delivery of recreation and catchment maintenance services for all operational assets. The team ensures that asset management plans, processes, systems and practices are implemented in accordance with relevant regulatory requirements. This team also contributes to the effective development, implementation and management of reporting systems within Water Delivery and across the entity, as well as the management of third party access and event approval at our sites.

The key functions of the Group Support and Catchment Services team include:

- Grounds maintenance (mowing/slashing);
- Terrestrial weed control;
- Aquatic weed control;
- Pest management;
- Fire management (fire breaks/prescribed burns);
- Fauna management/rescues (fish/koala etc);
- Security control (illegal access);
- Lease inspections;
- Dam embankment maintenance;
- WTP grounds maintenance; and

- Compliance including regulatory obligations for declared weeds, WH&S obligations, public and infrastructure safety responsibilities, environmental compliance obligations, Water Quality, prudent land management and conservation outcomes.

Technical Warranty and Development Group

Research, Science and Technology

The Research, Science and Technology Team (RS&T) is responsible for delivering research, science and technology outcomes for improved catchment and water cycle management, from catchment management and sustainability to advanced water treatment technologies. RS&T works with its research partners to achieve critical research outcomes in the five research program areas detailed below. RS&T has established Program Reference Groups (PRGs) to ensure stakeholder engagement and achieve best practice governance across its programs. The PRGs consist of sponsors and key stakeholders from across the business to inform and guide research delivery consistent with the organisation's strategic objectives and key phases of the Asset Management Framework (AMF) including asset policy, strategy, planning and operations.

The key research programs are:

- Water quality and quantity issues are addressed as required under the ADWG;
- Compliance with the ADWG including water quality specifications, as required under the Water Grid Contract;
- Compliance with additional water quality parameters as specified in the Water Grid Contract;
- Compliance with the water quality requirements specified in Seqwater's Drinking Water Quality Management Plans (DWQMPs); and
- Delivery of knowledge for effective and efficient delivery of water quality and quantity for catchment-based and manufactured water supply assets to support the achievement of Seqwater's strategic goals.

Project Closure

The Project Closure team is responsible for managing the close out of all project activities related to the construction, commissioning and defect rectification on the WCRWS and at the GCDP, regardless of who is performing the associated tasks. This includes tasks that are being undertaken by staff and consultants in the Project team as well as tasks that have been handed over or in the process of being handed over to Seqwater staff.

The Project team is responsible for ensuring all project deliverables are appropriately closed out through rigorous handover procedures e.g. owner verification, acceptance and sign off.

The key functions of the Project Closure team include:

- Program and Administration Support;
- Delivery, Handover and Integration; and
- Post Delivery.

Strategic Asset Readiness

The Strategic Asset Readiness team is accountable for ensuring that the drought resilient Manufactured Water assets transferred to Seqwater as part of the merger are maintained and operated so as to ensure a state of readiness to deliver water quantity and quality when required.

Operational Integration

Management of the performance of the Scheme Operator (Veolia Water Australia) to ensure efficient day to day operations of the Advanced Water Treatment Plants (AWTPs) located at Bundamba, Luggage Point and Gibson Island, the transfer networks and the GCDP.

The key functions of the Operational Integration team include:

- Management of contractor (Veolia) performance and day to day operations relating to the AWTPs and GCDP;
- Managing the integration of the Manufactured Water assets operations, contracts and processes into Seqwater; and
- Managing, achieving and reporting against a variety of compliance obligations as specified in the Water Grid Contract, SEQ System Operating Plan, the SEQ Water Market Rules and various Operating Protocols.

Engineering Support

Responsible for planning and delivering the engineering solutions associated with the Manufactured Water Assets including the GCDP and WCRWS, undertake the mandate of developing standards and to translate any RS&T outcomes to operational benefit.

Attachment 2 – Irrigation Infrastructure Renewal Projections Methodology

Attachment 3 – PB Hydrologic Assessment of Headworks Utilisation Factors

Attachment 4 – Indec calculation of ARR balances