QUEENSLAND COMPETITION AUTHORITY

Final Report

Seqwater Irrigation Price Review 2013-17

Volume 2

Central Brisbane River Water Supply Scheme

April 2013

Level 19, 12 Creek Street Brisbane Queensland 4000
GPO Box 2257 Brisbane Qld 4001
Telephone (07) 3222 0555
Facsimile (07) 3222 0599

general.enquiries@qca.org.au
www.qca.org.au

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GLOSSARY

Refer to Volume 1 for a comprehensive list of acronyms, terms and definitions.

EXECUTIVE SUMMARY

Ministerial Direction

In January 2012, the Authority was directed to recommend irrigation prices to apply to particular Seqwater water supply schemes (WSSs) from 1 July 2013 to 30 June 2017 (regulatory period). A copy of the Ministerial Direction forms Appendix A to Volume 1.

Summary of Price Recommendations

The Authority's recommended irrigation prices to apply to Central Brisbane River WSS for 2013-17 are outlined in Table 1. Irrigation customers in this scheme have not previously been charged.

Table 1: Prices for Central Brisbane River WSS (Nominal $/ML)

	Recommended Prices			
	2013-14	***2014-15***	***2015-16***	***2016-17***
Fixed (Part A)	15.11	17.54	20.08	22.73
Volumetric (Part B)	10.14	10.40	10.65	10.92

Source: QCA (2012).

As projected 2013-14 revenues are below cost-reflective revenues, the Authority recommends a price path where fixed charges increase annually by $2 per ML (plus consumer price index (CPI)) until cost-reflective levels are reached. Volumetric charges are increased at CPI over the balance of the regulatory period.

Final Report

Volume 1 of this Final Report addresses key issues, guiding principles and recommendations relevant to the regulatory and pricing frameworks, renewals and operating expenditure and cost allocation, which apply to all schemes.

Volume 2, which comprises scheme specific reports, should be read in conjunction with Volume 1.

Consultation

The Authority has consulted with stakeholders throughout this review. Consultation has included inviting submissions from, and meeting with, interested parties. The Authority also commissioned a consultant to undertake a review of Seqwater's proposed costs.

All submissions received on the Draft Report have been taken into account by the Authority in preparing its Final Report.

1. CENTRAL BRISBANE RIVER WATER SUPPLY SCHEME

1.1 Scheme Description

The Central Brisbane River WSS is located between the Wivenhoe Dam and Mt Crosby Weir. The scheme was established in 1980 to enable irrigation of up to 1,000ha (7,000ML).

An overview of the key characteristics of this WSS is provided in Table 1.1.

Table 1.1: Key Scheme Information for the Central Brisbane River WSS

	Central Brisbane River WSS
Business Centres	Esk, Fernvale, Karalee
Irrigation Uses	131 irrigators (horticulture, fodder crops, turf and grazing), and the Lowood and District Golf Club
Urban Water Supplies	SEQ Water Grid Manager, Ipswich City Council, Somerset Regional Council
Other	Glamorgan Vale Water Board and Seqwater

Source: Seqwater (2012al).

The Central Brisbane River WSS has 136 bulk customers in total, including 131 irrigators holding 6,771ML of medium priority (MP) water access entitlements (WAE). Other holders of MP WAE are Ipswich City Council (65ML), Somerset Regional Council (15ML), Lowood and District Golf Club Inc. (LDGCI) (40ML) and Seqwater (150ML).

Seqwater also holds 278,725 of High Class A Priority WAE allocated for urban/industrial use. The Glamorgan Vale Water Board (GVWB) holds 250ML of high priority (HP) WAE and Seqwater a further 25ML of unallocated volume.

An overview of the MP and HP WAE of this WSS is provided in Table 1.2.

Table 1.2: Water Access Entitlements

Customer Group	***Irrigation WAE (ML)***	***Total WAE (ML)***
Medium Priority	6,771	7,041
High Class A Priority	0	279,000
Total	**6,771**	**286,041**

Source: Seqwater (2012al).

1.2 Bulk Water Infrastructure

Bulk water services involve the management of storages in accordance with regulatory requirements, and the delivery of water to customers in accordance with their WAE.

The scheme includes approximately 132.9 km of regulated watercourse.

The Moreton Resource Operations Plan (ROP) combines the Central Brisbane River WSS (including Wivenhoe Dam) with the Stanley River WSS (including Somerset Dam) for the purpose of defining water sharing rules.

As part of this, despite being in a separate WSS, Somerset Dam contributes to the water supply reliability of the Central Brisbane River WSS. Somerset Dam's costs are, therefore, included in this review of the Central Brisbane River WSS.

Details of the bulk water infrastructure are presented in Table 1.3.

Table 1.3: Bulk Water Infrastructure in the Central Brisbane River WSS

Storage Infrastructure	*Full Supply Volume (ML)*	*Age (years)*
Wivenhoe Dam	1,165,200	28
Somerset Dam	379,850	53
Mount Crosby Weir*	2,200	87

Source: Seqwater (2012al). Note: For irrigation pricing purposes, Mount Crosby Weir is not included.

The characteristics of the bulk water assets are:

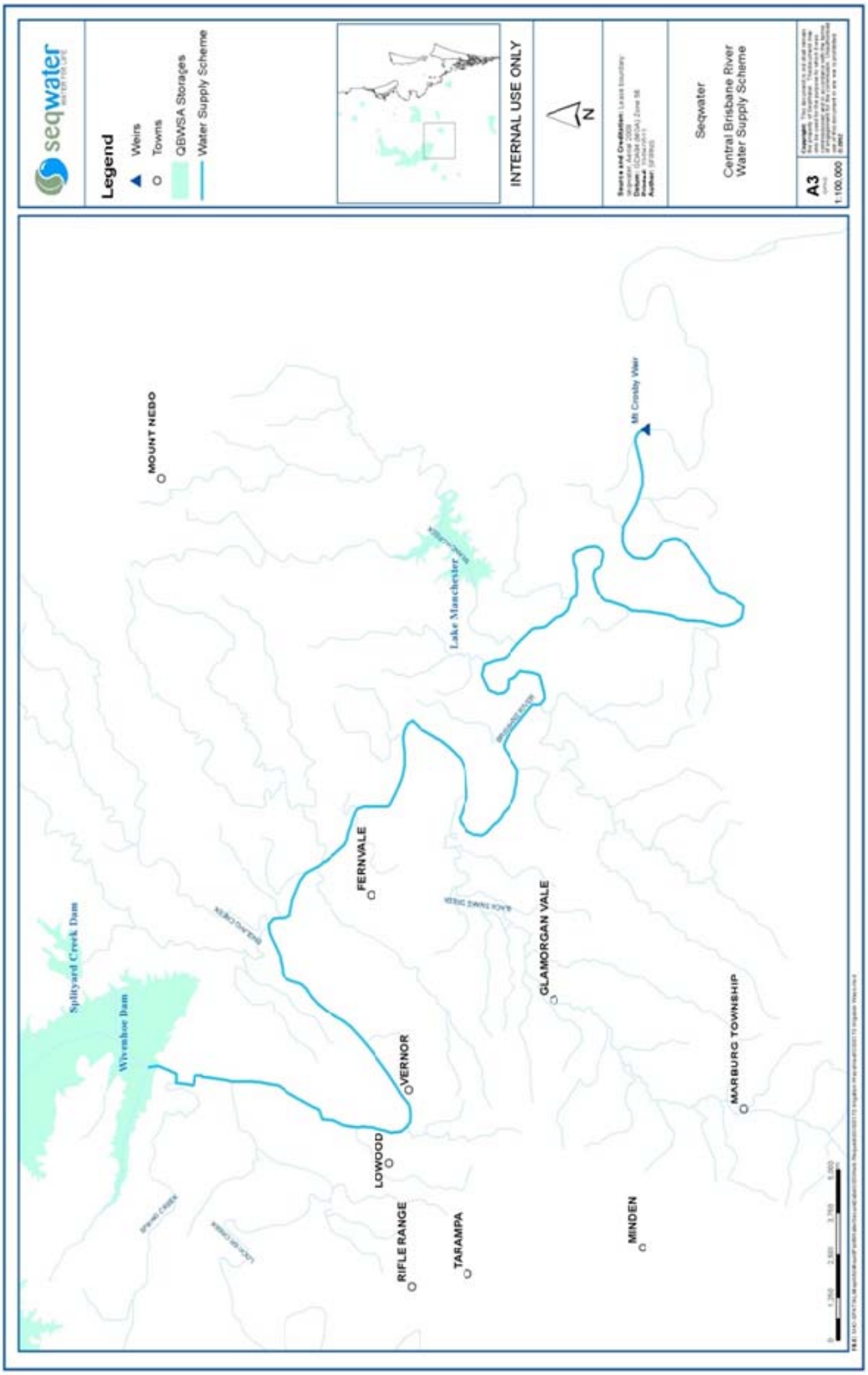
(a) Wivenhoe Dam – zoned earth fill and rock fill saddle dam, primary spillway 72 metres wide with five radial gates. Secondary spillway consists of a 164 metre wide chute with 3 metre ogee crest and three fuse plug embankments;

(b) Somerset Dam – concrete gravity dam, with eight radial and eight sluice gates; and

(c) Mount Crosby Weir – concrete weir with ogee spillway.

The location of Central Brisbane River WSS and key infrastructure is shown in Figure 1.1.

Figure 1.1: Central Brisbane River WSS Locality Map



Source: Seqwater (2012al).

1.3 Network Service Plans

Seqwater submitted the Central Brisbane River WSS network service plan (NSP) which presents Seqwater's:

(a) forecast operating and renewals costs, including the proposed renewals annuity;

(b) risks relevant to the NSP;

(c) proposed methodology to allocate scheme costs to irrigation customers; and

(d) proposed lower bound irrigation reference tariffs (cost-reflective prices).

No customer service targets have been documented for this scheme.

Seqwater has also prepared additional papers on key aspects of the NSPs and this price review, which are available on the Authority's website.

1.4 Consultation

The Authority has consulted with stakeholders throughout this review on the basis of the NSPs and supporting information. To facilitate the review the Authority has:

(a) invited submissions from interested parties;

(b) met with stakeholders to identify and discuss relevant issues;

(c) published notes on issues arising from consultation;

(d) commissioned independent consultants to review aspects of Seqwater's submissions;

(e) published all reports and submissions on its website; and

(f) considered all submissions and reports in preparing this report for comment.

The Ministerial Direction forms Appendix A to Volume 1.

2. REGULATORY FRAMEWORK

2.1 Introduction

Under the Ministerial Direction, the Authority must recommend the appropriate regulatory arrangements, including price review triggers and other mechanisms, to manage the risks associated with identified allowable costs.

In the 2006-11 irrigation price review, the Central Brisbane River WSS was not one of the schemes reviewed, and hence there is no current regulatory framework in place.

2.2 Regulatory Framework and Risk Allocation

Draft Report

Stakeholder Submissions

Seqwater

Seqwater identified a range of generic risks considered relevant to allowable costs across all schemes (see Volume 1). Seqwater considered that volume risk should be borne by customers through a tariff structure where the fixed charge recovers fixed costs and where the volumetric charge recovers costs that vary with demand.

In the context of cost risk, Seqwater considered that it should not bear the risk associated with costs it is not able to control, such as unforeseen events and costs that are difficult to forecast. Accordingly, Seqwater considers that an end-of-period adjustment for such costs is appropriate (Seqwater 2012aj).

Other Stakeholders

The Queensland Farmers' Federation (QFF 2012) submitted that dam operating conditions would be governed by urban requirements for high reliability supply under all seasonal conditions. Under varied conditions, supply for irrigation customers would not be met 100% of the time from the dam. If irrigators receive a benefit from the dam, it is for only short periods. [Mid Brisbane River Irrigators (MBRI) (2012) expanded on this point noting that during the period 2004 to 2012 there were reduced announced allocations and extreme weather. Neither of these events is within the control of the irrigator, yet (under the Seqwater proposal) results in costs being allocated to irrigators].

Stakeholders (J.M. Craigie 2012, J.B. and B.L. Keller 2012, and S. and H. Sinclair 2012) also submitted that the catchments behind Wivenhoe Dam do not control 100% of the water available to irrigators. Tributaries downstream of Wivenhoe also provide inflows into the Central Brisbane River that are available for irrigation and they are also part of the regulated supplies available.

During consultations in June 2012 (QCA 2012c), irrigators questioned whether paying for water (particularly higher Part A fixed water charges) would ensure water availability or increased reliability associated with WAE. Irrigators also argued that as they do not have access to ground water, this makes it more difficult for irrigators in this scheme to manage water availability and ensure on-farm supply.

Stakeholders (Riverside Farming Pty Ltd (RFPL) 2012 and J.M. Craigie 2012) argued that as the Central Brisbane River area has a small number of licence holders, irrigators may not be able to trade their allocation. Currently, even though there are a number of allocation holders not actually using their allocation (in whole or in part), there has been a lack of

temporary and permanent transactions to date. Small allocation holders and those that have no intention of using their full allocation may be motivated to dispose of their allocation when the time comes to avoid paying installation costs of a meter.

Some stakeholders (LDGCI 2012) consider their allocation an asset, and therefore have no wish to permanently trade this asset. However, they are open to temporary trades (even part of their allocation) in dry times.

J.B. and B.L. Keller (2012) submitted that people had moved to this region and paid substantially more for their land all because they have greater access to the Brisbane River. However, now that water allocations have been separated from land, a landowner would never be able to recoup their total initial investment purchase pre introduction of ROP.

Authority's Analysis

Summary of Risks and Cost Allocation

The Authority, in Volume 1, analysed the general nature of the risks confronting Seqwater and recommended that an adjusted price cap apply for all WSSs. The recommended allocation of risks and the means for addressing them are outlined in Table 2.1.

Table 2.1: Summary of Risks, Allocation and Authority's Recommended Response

Risk	*Nature of the Risk*	*Allocation of Risk*	*Authority's Recommended Response*
Short Term Volume Risk	Risk of uncertain usage resulting from fluctuating customer demand and/or water supply.	Seqwater does not have the ability to manage these risks and under current legislative arrangements, these are the responsibility of customers. Allocate risk to customers.	Cost-reflective tariffs.
Long Term Volume Risk (Planning and Infrastructure)	Risk of matching storage capacity (or new entitlements from improving distribution loss efficiency) to future demand.	Seqwater has no substantive capacity to augment bulk infrastructure (for which responsibility rests with Government). Seqwater has some capacity to manage distribution system infrastructure and losses provided it can deliver its WAEs.	Seqwater should bear the risks, and benefit from the revenues, associated with reducing distribution (and bulk) losses (where/when the loss can be permanently traded).
Market Cost Risks	Risk of changing input costs.	Seqwater should bear the risk of its controllable costs. Customers should bear the risks of uncontrollable costs.	End of regulatory period adjustment for over- or under-recovery. Price trigger or cost pass-through on application from Seqwater (or customers), in limited circumstances.
Risk of Government Imposts	Risk of governments modifying the water planning framework imposing costs on service provider.	Customers should bear the risk of changes in water legislation though there may be some compensation associated with National Water Initiative (NWI) related government decisions.	Cost variations may be immediately transferred to customers using a cost pass-through mechanism, (depending on materiality).

Source: QCA (2012).

As noted in Volume 1, the Authority recommended that short term volume risk should be assigned to customers through a tariff structure that recovers fixed costs through fixed charges and any and all variable costs through volumetric charges.

In response to QFF and MBRI (2012), the Authority accepted that irrigators' supply reliability is lower than for urban users, and this is reflected in the allocation of costs between user groups (see Authority's analysis in Chapter 5).

In response to stakeholders (J.M. Craigie 2012, J.B. and B.L. Keller 2012 and S. and H. Sinclair 2012), the Authority noted that tributary flows downstream of storages are typically part of the assessed system supply and are, in effect, taken into account in defining WAE. The risk implications of low flow periods will be reflected in the allocation of fixed costs such as renewals costs and fixed operating costs between MP and HP users.

The Authority accepted that there is volume-related risk borne by irrigators and that revenues can be cyclic. As noted above, irrigators are best placed to manage this risk, particularly given that trading of water allocations is an option. Charges for water take into account the supply reliability in the scheme, and it was accepted that groundwater options are generally not available. However, the scheme has a high inherent level of supply reliability when compared to other schemes.

Trading

The introduction of a water charge including a fixed component could be expected to lead to an increase in trading activity. While some WAE holders may choose to trade their allocation to other users, this could be expected to lead to more productive use of available supplies over time. The combined asset value of land and water allocation should not be affected – irrigators can gain by trading water to better match their needs. Any change to the total value will likely reflect market factors rather than the separation of water and land assets.

There were no permanent trades of irrigation WAE over the period 2008-09 to 2011-12. The volumes of temporary water traded for the Central Brisbane River WSS are identified in Table 2.2.

Table 2.2: Volume of Water Traded in Central Brisbane River WSS (ML)

	2008-09	*2009-10*	*2010-11*	*2011-12*
Temporary	0	0	40	210

Source: Seqwater (2012al).

Submissions Received from Stakeholders on the Draft Report

Risks

MBRI (2013d) submitted that the long-term volume risk should be shared with the supply authority and not by the irrigators whose WAE is less than 0.16% of the capacity of the infrastructure. MBRI calculated this percentage using the ratio of the 6771ML of WAE to the total storage capacity of the Wivenhoe/Somerset Dams (estimated to be 4,274,800ML by MBRI).

MBRI re-submitted that the reliability of supply of the 6771ML of WAE is linked to natural flows rather than supplemented water.

MBRI also did not agree with the Authority's suggested procedure for end-of-period adjustments, indicating that the allocation to irrigators does not relate to any service provided and is so small that the risks should be carried by Seqwater. MBRI also submitted that Seqwater's electricity costs are not to the benefit of irrigators.

MBRI (2013d) did not accept that a fixed charge is appropriate because no infrastructure is irrigation specific and the proportion of water storage infrastructure that applies to irrigation is dwarfed by other users. MBRI has received no increase in supply reliability.

MBRI concluded that the allocation of costs to irrigators does not relate to any service provided and is so small that these risks should be borne by Seqwater and only adjusted (not paid) at the end of each pricing period and incorporated in the new price path, if appropriate.

Trading

MBRI (2013d) did not accept that an artificially escalated price will increase trading in the scheme. MBRI noted that based on a survey of its members, 31.5% did not have pumps and were not using their WAE. The main reasons for this were repeated damage to pumping infrastructure since September 2010, including from dam releases. Prior to the flood events, there was the effect of significant restrictions for 4 out of 5 years prior to 2010.

MBRI also suggested that the value of the combined land and WAE is higher than if the land and WAE were separately sold. There was concern that flood release strategies have devalued many properties and depressed real estate values generally.

MBRI considered that for small WAE holders, the nominal fixed charge would not provide sufficient incentive to trade, particularly given the impact on land values. MBRI submitted that incentives to encourage trading and improved efficiencies in water use should be separated entirely from the pricing structure.

Authority's Response to Submissions Received on the Draft Report

Risks

The Authority disagrees with MBRI's estimated share of capacity of 0.16% share. MBRI compares safe yield of WAE to capacity of the storage including flood mitigation rather than safe yield of the combined storages.

The Water Resources Plan (WRP) and the ROP clearly define the volumes available and the beneficiaries of the scheme. This issue is reviewed in Chapter 4 (below) regarding the allocation of costs between MP and HP WAE. That is, the reliability of supply of the 6771ML is linked to the yield of the system as a whole, including supplemented volumes, natural flows from tributaries and overland flows. All customers share in all these sources, and customers cannot selectively claim their supply is from one of the sources to the exclusion of others, as outlined in the regulatory framework.

While MBRI indicated that their share of supply is insignificant, this argument could apply to any other small customer groups sourcing water from the scheme. The insignificance of the customer group is not a reason to allow free water, although there may be implications for the costs of metering administration and billing relative to the revenue gained.

The Authority considered long-term risks relevant to Seqwater (Draft Report) and concluded that augmentation of bulk infrastructure is the responsibility of the Queensland Government, not Seqwater. As Seqwater cannot manage long-term volume risks, it is not appropriate to allocate these costs to Seqwater.

The Authority proposes to retain its approach to end-of-period adjustments for legitimate under- or over-recovery of costs. Irrigators' share of any such adjustment would be in-line with their relatively small share of WSS costs.

While within period adjustments can be considered, given the materiality of the costs involved, end-of-period adjustments would seem most appropriate for changes in uncontrollable costs. Detailed discussion of the sharing of costs between users is provided in later sections.

Trading

The Authority does not propose to 'artificially escalate' prices. The Authority's prices are not exclusively set to promote trading – rather the objective is to be as cost-reflective as reasonably possible.

In a well-functioning market, the value of land and water combined should not vary substantially from the separated value of the assets.

3. PRICING FRAMEWORK

Under the Ministerial Direction, the Authority is required to recommend Seqwater's irrigation prices (and tariff structures) to apply over 2013-17.

3.1 Tariff Groups

The Ministerial Direction specifically directs the Authority to adopt the tariff groups as proposed in Seqwater's NSPs. Currently there is no tariff group for the river segment of the Central Brisbane River WSS. Seqwater proposed in its NSP that a single bulk tariff group apply.

Accordingly, the Authority has adopted the proposed tariff group for this WSS.

3.2 Tariff Structure

Introduction

Historically, scheme irrigators in the Central Brisbane River WSS have not been required to pay water charges. However, under the Ministerial Direction, the Authority is to recommend irrigation prices to apply to the Central Brisbane River WSS from 1 July 2013 to 30 June 2017.

Stakeholder Submissions

Seqwater

Seqwater (2012aj) submitted that the Central Brisbane River WSS does not currently have irrigation prices, but that prices are to be introduced to the scheme subsequent to the Authority's review.

Seqwater contends that with the introduction of the Moreton ROP a deemed contract (under the *Water Act 2000*) that requires irrigators to pay water charges, now applies to the scheme's irrigators. Seqwater considers that this therefore provides them a legal mechanism to set charges, or for a regulatory decision to be applied, assuming there is no continuing legal obligation to provide water free of charge (Seqwater 2012c).

Seqwater (2012al) considered that all costs associated with the provision of irrigation services in the Central Brisbane River WSS are fixed. Accordingly, Seqwater proposed to apply a single fixed tariff to Central Brisbane River irrigation customers.

Other Stakeholders

A number of stakeholders (QCA 2012c, GRASSCO 2012, J.B. and B.L. Keller 2012, R. Ryder and S. Crockett 2012) submitted objections to Seqwater's proposed tariff structure of a 100% fixed charge regardless of use. These stakeholders consider this tariff structure will cause financial hardship, particularly in periods of low water availability or drought. In addition, J.B. and B.L. Keller (2012) submitted that the split should alternatively be either 60:40 or 50:50.

Additionally, it is claimed that some irrigators already pay a water licence fee on an annual basis to the Department of Natural Resources and Mines (DNRM) (Ryder 2012).

Authority's Analysis

The Authority, in Volume 1, analysed the tariff structure and the efficiency implications of the tariff structure, to apply to Seqwater's schemes.

The Authority considered that, in general, aligning the tariff structure with fixed and variable costs will manage volume risk over the regulatory period and send efficient price signals. To signal the efficient level of water use, the Authority recommended that variable costs be recovered through a volumetric charge, with fixed charges covering the balance.

While noting stakeholders' concerns regarding a high fixed charge, particularly in periods of low water availability, under current legislative and contractual arrangements (and the Ministerial Direction), customers must bear all the costs of water supply incurred by Seqwater, irrespective of whether it is made available (provided the costs of supply are efficient and prudent).

In response to stakeholder concerns that DNRM levies an annual water licence fee, the Authority confirmed that no such fees apply for water allocations.

The Authority also recognised that tariff structures are only part of a mix of institutional arrangements in Queensland designed to direct water to its highest and best use from the overall community perspective. In addition to these institutional arrangements, normal commercial profit motives and water trading are relevant to ensuring water is directed to its highest and best use.

3.3 Water Use Forecasts

Previous Review 2006-11

Since water charges are not currently applied to the scheme irrigators in the Central Brisbane River WSS, water use forecasts were not required in the previous price period.

Draft Report

Stakeholder Submissions

Seqwater

Seqwater (2012al) submitted that no water use information is available as no water meters have been installed in this scheme. Additionally forecast water use for the period 2013-17 has not been provided for the Central Brisbane River WSS.

Seqwater indicated that announced allocations have been 100% in the last two years.

Other Stakeholders

R. Ryder (2012) submitted that permitted water use was reduced to 25% during drought times as occurred towards the end of the year 2000 and during the 2007 drought.

Authority's Analysis

The application of two-part tariffs removes the need for water use forecasts, where the fixed tariff reflects fixed costs and the volumetric tariff reflects variable costs. Water use data is, however, required for the Seqwater irrigation review to address Government's requirement that current prices (that is, revenues) be maintained and to estimate the cost-reflective volumetric tariffs. Refer Chapter 6: Total Costs and Final Prices of this report.

In the Draft Report, the Authority noted that unlike other Seqwater WSSs, the Central Brisbane River WSS does not have a recorded history of irrigation water use and associated revenues that can be used for determining a baseline revenue amount.

Submissions Received from Stakeholders on the Draft Report

MBRI (2013a) noted in response to the Draft Report that the Authority's view that no historic irrigation use figures are available is incorrect as irrigators have had logbooks since 2005. MBRI submitted that it would be inappropriate for the Authority to establish cost-reflective volumetric tariffs without considering historic use data that included water use associated with the three years of restrictions and two years of flood related reconstruction.

MBRI (2013e) subsequently submitted that they were aware that log-book use has been spasmodic, but that water use has been low due to high rainfall since 2009. They noted that DNRM recognised the efficient use of log-books during the time of restrictions from 2005 to 2009. Contemporaneous evidence should not be ignored by the Authority.

Authority's Response to Submissions Received on the Draft Report

Seqwater (2013) advised that maintaining a log-book is a condition of holding a WAE where a meter does not exist. Given irrigators of the Central Brisbane River WSS generally do not have meters, this arrangement was introduced in 2005 with irrigators reporting water use data (as outlined in their log-book) to Seqwater's Karalee office.

Seqwater also indicated that log-book related water use data has tended to be incomplete due to the modest level of WAE held by some irrigators and an inability to enforce reporting given that water for irrigation has historically been provided without charge.

On this basis, although water-use data is available, this data is incomplete and unreliable. The Authority is reluctant to rely on such data to establish a volumetric tariff. As an example, it would be difficult to accurately establish water use averages in those years where no restrictions applied and then compare these with averages in years where restrictions did apply or where irrigators were recovering from flooding.

The Authority found that even if irrigators used all nominal allocations, the average percentage of total all sectors water use would change by only 1%.

The Authority's approach to forecasting water use is outlined further in Chapter 6: Total Costs and Final Prices (below).

3.4 Free Water Allocations

Introduction

Historically, irrigators in the Central Brisbane River WSS have not been required to pay water charges. However, under the Ministerial Direction, the Authority is to recommend irrigation prices to apply from 1 July 2013 to 30 June 2017.

SunWater Review 2012-17

SunWater (2011d) submitted that free water allocations should be considered on the basis of their original intent and proposed the following criteria on which to base the assessment:

(a) legacy contract arrangements: these relate to agreements that were struck at arm's length on a commercial basis with particular water users; and

(b) compensation arrangements: these relate to agreements where an entity held a pre-existing right to water which needs to be preserved as a condition of the storage development or as a legislative or policy requirement.

SunWater submitted that, for legacy contracts, the current commercial arrangement should remain and that it is not seeking to recover any revenue shortfall from other users. However, free water allocations arising from compensation agreements should be considered a cost of the scheme's development. These costs should be dealt with no differently than other compensation arrangements and, accordingly, should be recovered from the balance of WAE holders in the scheme.

In relation to (a) above, the Authority recommended that SunWater continue to meet, and bear the costs of, legacy arrangements.

In relation to (b) above, the Authority also recommended that pre-existing rights to free water (compensation arrangements) should be maintained where they continue as part of an existing agreement or as part of a current legislative or Government policy. Neither SunWater nor customers with pre-existing rights to free water should bear these costs.

Draft Report

Stakeholder Submissions

Seqwater

Seqwater (2012aj) submitted that irrigation customers in the Central Brisbane River WSS currently pay no charges and that this situation has existed for some years prior to Seqwater being established. The customers currently paying no water charges in Central Brisbane River WSS (2012al) include 131 irrigators holding 6,771 ML of MP WAE.

Seqwater also submitted that the arrangement to provide up to 7,000 ML of water per year free of charge for the purpose of irrigation, as outlined in the regulation made under the *Water Act 2000* – i.e. the *Water (Transitional) Amendment Regulation (No.1) 2002* reflected Government policy at the time.

Seqwater submitted that the requirement for Seqwater to provide water free of charge to Central Brisbane River WSS irrigators expired on 7 December 2009, being the day that the Moreton ROP commenced. At that time, Seqwater became the holder of the Resource Operations Licence (ROL) for the Central Brisbane River WSS.

Upon commencement of the ROP, irrigators' historical entitlements were converted to water allocations (or other entitlements) as stated in the ROP. The provisions of the *Water Act 2000* then took effect so that the conditions of supply were provided for under the Standard Supply Contract – Central Brisbane River WSS (supply contract).

The supply contract sets out the terms under which a customer is to pay water charges levied by Seqwater as the ROL holder and requires water charges to be set by Seqwater, having regard to the criteria that would be applied by the economic regulator.

Although Seqwater has levied no charges since 7 December 2009, it proposed that charges should apply to irrigation customers in the Central Brisbane River WSS from 1 July 2013.

Other Stakeholders

The Authority received a total of 92 submissions from customers of the Central Brisbane River WSS[1], of which the majority stated that no charges should be levied for irrigation customers in the scheme. Stakeholders submitted that no irrigation water charges should apply on the basis that:

(a) Seqwater has no right to levy irrigation charges (W. Keller 2012, MBRI 2012);

(b) the obligation on Seqwater in accordance with the *Water (Transitional) Amendment Regulation (No.1) 2002* to provide water for the purpose of irrigation free of charge, was not extinguished by establishing the supply contract (J.M. Craigie 2012a,b and MBRI 2012);

(c) this would be unjust or unreasonable (R. Ryder 2012, J. Begg 2012, D.W. and L.N. Strong 2012, B. Lee 2012, L. Sippel 2012, F.J. and E.A. Reid 2012, R. Tudge 2012, D.F. and J.L. Collier 2012, A. Chambers (2012), G.C Beard 2012, J.H. Delange 2012, A. Geiger 2012, J.M. Craigie 2012a, J.M. Craigie (2012b), M.S. and B.A. Kirby 2012 and QFF 2012);

(d) the purpose of Somerset Dam and Wivenhoe Dam has been only to provide domestic water and for flood mitigation, not to provide water for irrigation (MBRI 2012, R. Ryder 2012, J.M. Craigie 2012a and J.M. Craigie 2012b);

(e) the construction of Somerset Dam has not improved, nor was it ever intended to improve, irrigation reliability (J.M. Craigie 2012a, MBRI 2012);

(f) irrigators' water access has always been from natural [not supplemented] river flows and that the riparian water rights existed prior to Wivenhoe Dam being constructed (R. Ryder 2012, J.M. Craigie 2012a, J.M. Craigie 2012b, MBRI 2012);

(g) this would lead to financial hardship (B. Bernitt and C. Summerville 2012 and J. Harris 2012);

(h) no costs are incurred by Seqwater in delivering water for irrigation and there is a substantial history of irrigators not paying with successive decisions or proposals to introduce metering being rescinded or not proceeding (R. Ryder 2012, J.M. Craigie 2012a, MBRI 2012); and

(i) annual fees are paid already (for water licences) to DNRM (R. Ryder 2012).

J.M. Craigie (2012b) submitted that Seqwater cannot levy charges on the basis that:

(a) no formal levels of service exist and, as a consequence, it is impossible for the Authority to determine the prudent and efficient costs to be allocated to irrigators;

(b) the *Legislative Standards Act 1992* requires that any intention to adversely affect certain rights (such as the rights of irrigators to receive free water through the levying of charges) is to be mentioned in the explanatory memorandum to the *Water Act 2000*. However, the explanatory memorandum is silent in this regard;

(c) the effect of the *Acts Interpretation Act 1954* (when read in conjunction with the *Statutory Instruments Act 1992*) is that regardless of the *Water (Transitional)*

[1] All stakeholder submissions have been placed on the Authority's website. The summary below identifies the issues raised in submissions and expanded upon by specific stakeholders.

Amendment Regulation (No.1) 2002 expiring, the right of irrigators to receive water free of charge is not extinguished. That is, the expiry does not affect a right or privilege acquired by that regulation and that right or privilege may be enforced as if the expiry had not happened. Craigie cited a 1999 consultation document 'Converting the South East Queensland Water Board into a Joint State/Local Government Owned Company' which stated that the riparian rights would continue under the new structure;

(d) a letter from DNRM to irrigators in 2005 confirms that the *Water Amendment Act 2005* (which introduces the supply contract) does not affect Seqwater's obligation to supply, free of charge, up to 7,000 ML for irrigation (MBRI (2012) who also noted that 229 ML of WAE was not currently allocated and should also be made available free of charge);

(e) the supply contract itself does not have effect as -

(i) it is generic and does not specifically meet the needs of irrigators;

(ii) the requirement (as outlined in S122A of the *Water Act 2000*) that the supply contract be reviewed 1 year after taking effect, has lapsed; and

(iii) although the supply contract provides for release services, no release services are provided by Seqwater as the 6,771 ML is unsupplemented supply.

Further, J.M. Craigie (2012a) submitted that, according to the Moreton ROP, the permitted distributions out of Wivenhoe Dam are exclusively reserved for HP (urban and industrial) water allocations and not MP irrigation water allocations.

J.B. and B.L. Keller (2012a) submitted that Seqwater can have its irrigation customers take water free of charge and the foregone potential revenue of $393,400 could be absorbed either by Seqwater or the WGM, or Government. This will benefit irrigators until water use, timings of peak demand and losses in the delivery system of the Brisbane River are better understood and substantiated.

J.B. and B.L. Keller (2012a) also submitted that during consultation to finalise the Moreton WRP in 2007 and the Moreton ROP, irrigators sought unsuccessfully to obtain a response to their input regarding the treatment of free water.

S. and H. Sinclair (2012a) proposed that, if the Authority found agreement with Seqwater's approach to apply charges, a price path should apply with a starting price of $21.52/ML to commence in 2013-14, escalated by the consumer price index (CPI) plus $5 per annum over seven years, split 70-30 to promote water conservation. This will allow a full cost of recovery pricing structure over time and allow inactive WAE holders to commence water trading, thereby directing water to viable commercial enterprises (best and highest use) and also encourage local economic activity. In other submissions (for example, Craigie 2012a), submitted that fixed charges should not be introduced in the absence of a properly established water trading market.

Glamorgan Vale Water Board (GVWB) (2012) submitted that historically 250ML of water [classified in the Moreton ROP as High Priority A] has been received free of charge by GVWB and that the purpose of this allocation is for stock and domestic use.

Authority's Analysis

In Volume 1, the Authority recommended that pre-existing rights to free water should be maintained where they continue as part of an existing agreement or as a part of current legislation or Government policy. Neither Seqwater nor customers with a pre-existing right to free water should bear these costs.

With respect to Seqwater's proposed treatment of water currently being provided free of charge, the Authority considered that, as a general principle, were such arrangements to exist, Seqwater should:

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

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

However, in the context of Seqwater irrigation WSSs, neither of the circumstances outlined in (a) or (b) above are currently known to apply.

With respect to claims that Seqwater cannot levy charges, the Authority noted that, under the Ministerial Direction issued under section 23 of the *Queensland Competition Authority Act 1997* (the QCA Act), the Authority has been directed to recommend irrigation prices to apply for the Central Brisbane River WSS.

The Authority was not asked to determine whether Seqwater is legally entitled to impose and recover irrigation charges on the Central Brisbane River WSS. This is a contractual matter between Seqwater and the irrigators, in the event that the Government determines such charges should apply.

That said, the Authority's understanding of the relevant issues was as outlined below:

(a) the provisions of the *Legislative Standards Act 1992* requiring any intention to adversely affect certain rights to be mentioned in explanatory notes do not invalidate any legislation if this requirement is not observed;

(b) the saving provision in the *Acts Interpretation Act 1954* that provides for the maintenance of rights or privileges that existed under legislation on the repeal or expiry of that legislation does not preserve the requirement on Seqwater to provide free water allocations – the rights of irrigators were limited to a one year duration;

(c) the 2005 letter from DNRM confirms the continuance of the practice of providing free water allocations at the time it was written. The views in that letter do not establish a legal basis for continuing free water allocations;

(d) the generic nature of the standard supply contract does not mean that the supply contract is invalid;

(e) the failure (if such failure occurred) of the parties to review the standard supply contract is an issue of non-compliance with the *Water Act 2000* and does not invalidate the standard supply contract; and

(f) as the Moreton ROP associates the reliability of the 6,771 ML of WAE with Somerset Dam, Wivenhoe Dam and related infrastructure (not natural flows), the irrigation WAE in the Central Brisbane River WSS is supplemented (that is, benefits from the water storage infrastructure).

Costs are therefore incurred by Seqwater in maintaining the capacity and operational services to deliver the required level of reliability associated with that WAE (see further discussion of cost issues in chapters 4 and 5). In the absence of detailed levels of service, Seqwater's proposed costs are assessed against currently available information. The Authority understood that Seqwater intends to consult with irrigators to establish levels of service for this WSS.

However, it is stressed that, even if the Authority's understanding of the legal issues as to Seqwater's contractual entitlement to recover irrigation water charges is not correct, the Authority has a statutory responsibility to recommend irrigation water charges for the Central Brisbane River WSS as required by the Ministerial Direction and the preceding issues do not alter that obligation.

In response to stakeholder concerns that DNRM levies an annual water licence fee, the Authority confirmed that no such fees apply for water allocations. However, past (and current unsupplemented) water licences may incur charges.

The suggestion by J.B. and B.L. Keller (2012a) for the Government to absorb the foregone revenue pending further review of water use, timings of peak demand and losses in the delivery system of the Brisbane River is a matter for Seqwater and Government. The Authority proceeded as directed on the basis of currently available information. The Authority also noted comment about the ROP process. This was considered to be beyond the scope of the Authority's Ministerial Direction.

The Authority noted and supported S. and H. Sinclair's (2012) submission that should irrigation water charges be applied, they should transition to [lower bound] full cost recovery over time to promote water trading and its benefits, including directing water to viable commercial enterprises and higher value uses, resulting in greater local (and regional) economic activity. The lack of a current market should not preclude its future development.

The Authority's draft recommended charges, including the proposed price path, from which the financial impact on individual irrigators can be discerned, are in Chapter 6 below.

In response to the GVWB submission, the Authority noted that the 250ML per annum of historically free water is classified in the Moreton ROP as High Priority Class A. Given the nature of the customer base (reticulation to rural residential blocks) and the high reliability of this water, the Authority considered it is not relevant to irrigation water charges. That is, the Authority's price recommendations did not apply to this group.

The Authority concluded that it has a statutory responsibility to recommend irrigation water charges, with any dispute over the legal right for Seqwater to impose and recover those charges being a matter for Government not the Authority. The 6,771 ML of MP WAE in this WSS is supplemented by scheme infrastructure. Certain costs not related to these irrigation services were excluded from the cost base by the Authority before the remaining costs have been allocated according to reliability of services provided. These matters are addressed in subsequent chapters. [The Authority also noted that the potential for an unallocated amount of 229ML to be made available for any purpose is beyond the scope of the Authority's review as it would require ROP amendment].

Submissions Received from Stakeholders on the Draft Report

QFF (2013b) noted that Central Brisbane River irrigators continue to submit that there should not be irrigation charges for the Central Brisbane River WSS.

Continuation of Pre-Existing Rights

Stakeholders during consultations in February 2013 (QCA 2013) - including representatives from MBRI – suggested that given the term 'legacy arrangement' has a specific meaning, the alternative term 'pre-existing right' should be used.

MBRI (2013a, 2013d) remained of the view that nothing has changed since irrigators' licences were converted into allocations. From the Explanatory Memorandum and Hansard it is clear that Seqwater remained subject to a statutory condition to supply up to 7000ML at no charge. Nothing in the Moreton ROP changed that situation.

MBRI submitted that:

(a) various documents support its view of continued free water rights, including:

  (i) the *Water Resources Legislation Amendment Regulation* (No.1) of 2000 which stated that 7000ML was to be made free of charge to irrigators;

  (ii) the *Water (Transitional) Amendment Regulation (No.1) 2002*. This regulation provided for the continuing allocation for the South East Queensland Water Corporation and the conditions for company allocation. This repeated the free water provisions made in 2000;

  (iii) the explanatory notes to the *Water Amendment Bill 2005*. Under Section 387E of this Bill, SEQ Water could recover from customers the reasonable cost of installing, reading and maintaining a water meter. SEQ Water was still subject to the statutory condition to supply the water free of charge; and

  (iv) a June 2008 transfer notice which shows Government's intention of a continuance of the 7000ML as a pre-existing right at no charge. The same right applied to Glamorgan Vale Water Board;

(b) Seqwater's authority to take water was replaced, by force of s.1037A (5) of the *Water Act 2000*, by the granting of a ROL on 7 December 2009. That authority to take water included conditions on Seqwater to make water available to irrigators without charge. MBRI submitted that as a matter of law, and of common sense, those conditions continued under the ROL. MBRI (2013a) considered that the Authority's position that free water rights ceased from 2009 is clearly wrong;

(c) nothing has changed since the establishment of the Moreton ROP (except that reliability of access to natural system flows has been reduced because of the more onerous water sharing rules). Irrigation restrictions in the Moreton ROP do not recognise this and disadvantage irrigators by permitting HP WAE holders an increased share of natural system flows; and

(d) Seqwater has undertaken no structural changes or done anything to improve the reliability of water for irrigation since this time.

MBRI (2013a) also submitted that water supply should continue without charge or a price of $0 per ML recommended. MBRI and irrigators during consultation noted:

(a) it is pointless to set a price where no price has previously applied under the Supply Contract given no service standards are defined and Government has [previously] accepted irrigators' pre-existing rights to water without charge;

(b) the deemed Supply Contract should have no effect because it has not been viewed by irrigators.

During consultations in February 2013, stakeholders (including representatives from MBRI) queried whether there is any documentation that shows water charges can now apply as opposed to documentation showing that previous rights to free water no longer apply.

In summary, MBRI (2013d) submitted it has a pre-existing right to draw water at no charge and this is supported by non-storage system flows in the catchment available to irrigators established in 1981 and recognized by the Government. Cabinet minutes, explanatory memoranda, regulations and legislation state clearly a continuation of a requirement to provide water at no charge to irrigators.

Supplementation of Water

MBRI (2013a, 2013b) and W Keller (2013) submitted that it is a historical fact that the infrastructure associated with Somerset and Wivenhoe dams is irrelevant to MBRI's needs.

In regard to Somerset Dam, MBRI (2013d) submitted that:

(a) the Somerset Dam was built with the legislated purposes of supplying water to Brisbane and Ipswich and for flood prevention. Irrigation was not a matter in contemplation of the legislature at the time; and

(b) it is inappropriate to include costs associated with Somerset Dam as it is not part of the Central Brisbane River WSS but is part of the Stanley River WSS under the ROP for supply to HP users. The mean average natural flows into the Brisbane River system below Somerset Dam are substantial and the Dam provides no improved reliability or benefit to them.

MBRI (2013d) submitted that at the time of construction of Wivenhoe Dam, commencing in 1976, the scale of land acquisitions and construction resulted in considerable economic and social disruption to the local communities. MBRI submitted that:

(a) a Cabinet decision in 1980 to apply a charge of $4/ML to irrigators was over-turned in 1981. A key reason for Cabinet's decision was that irrigation would not place any strain on the natural water available;

(b) the free allocation to GVWB is relevant to irrigators as it also recognises the principles adopted by Government including that the dams were not constructed for the purposes of water supply to GVWB and the water historically taken by that board was very small when compared to natural system flows at that time. Similarly, W. Keller (2013) submitted that given the history of government providing water free of charge to Glamorgan Vale Water Board has been honoured for the past 30 years, providing water to irrigators free of charge should also be honoured;

(c) access to water is now subject to announced allocations, with the result that in dry times, MBRI entitlements are reduced even if there is sufficient water to satisfy entitlement from overland flows or natural recharge of holes (that is, unsupplemented water).

Process of Investigation

There was also some comment from MBRI and stakeholders in Round 2 consultations on the Authority's process of investigating the free water issue, namely:

(a) the failure of the Authority to undertake a thorough investigation of irrigators' pre-existing rights is an abrogation of the Authority's responsibility to make decisions in light of all relevant facts. It has an oppressive effect on small community organisation like MBRI which is forced to spend time and resources to establish its rights (MBRI 2013a);

(b) the Authority should investigate matters beyond those raised in submissions, such as explanatory memoranda and Queensland Cabinet documents;

(c) there is a resourcing and information imbalance between irrigators and the Authority, with irrigators not fully aware of the extent of the Authority's information; and

(d) MBRI sought details of the Authority's legal advice to assist it in determining whether or not it should challenge the credibility of the Authority's sources.

Authority's Response to Submissions Received on the Draft Report

Continuation of Pre-Existing Rights

Regarding the phrase 'pre-existing rights' the Authority does not object to the term (or any other plain English description of water being supplied without charge). However, the Authority notes that there is no explicit recognition in the relevant legislation of any 'pre-existing rights' to water free of charge, nor the continuance of any such rights.

In response to MBRI (2013d), and issues raised in consultation, the Authority's responses are:

(a) that all documents provided by MBRI to the Authority outlining the history of water being provided for irrigation without charge, have been considered. The Draft Report noted that, for example, the 2005 letter from DNRM confirms the continuance of the practice of providing free water allocations at the time but that that practice did not establish a legal basis for continuing free water allocations. The current regulatory framework supersedes the policy decisions of previous governments. The Authority outlined its understanding of the current regulatory framework in the Draft Report (refer above);

(b) under Section 1037A(5) of the Water Act, Seqwater held an 'authority' to take water until such authority is replaced by a water entitlement. This authority was to enable Seqwater to make available free of charge water up to 7000ML to meet the rights of licensees and riparian users. These arrangements changed once the regime for Water Allocations replaced licences after the implementation of the Moreton ROP in 2009. This is clearly reflected in section 121 of the Water Act;

(c) therefore, the free water licences confirmed in the transfer notice of 2008 remained in place for only one year before licences were converted to WAE under the ROP. Seqwater was advised that it could from thenceforth apply charges, but elected not to at the time;

(d) the Authority agrees that the ROP outlines different levels of restrictions (announced allocation rules) for MP and HP WAE. Accordingly, the Authority has allocated a

lower portion of scheme costs to MP WAE (refer Chapter 4: Renewals Annuity and Chapter 5: Operating Expenditures); and

(e) under the provisions of the Supply Contract , the ability of Seqwater to levy charges is not conditional on Seqwater undertaking structural changes or improving the reliability of water for irrigation (beyond that outlined in the ROP).

In relation to contractual arrangements, the Authority's response is that:

(a) where service standards are not yet prescribed, the Authority previously noted that costs are incurred by Seqwater in maintaining the capacity and operational services to deliver the required level of reliability associated with that WAE. In the absence of detailed levels of service, Seqwater's proposed costs are assessed against currently available information. The Authority understands that Seqwater will consult with irrigators to establish levels of service for this WSS; and

(b) the failure (if such occurred) of the parties to review the Supply Contract is an issue of non-compliance with the Water Act and does not invalidate the Supply Contract.

In response to questions about what arrangements show that water charges can apply, the Authority notes that the Supply Contract sets out the terms and conditions under which Seqwater can impose water charges on irrigators of the Central Brisbane River WSS.

Supplementation of Water

In response to the view that irrigation water supply is not supplemented by the dams, the Authority notes that:

(a) the Moreton ROP clearly indicates that the Central Brisbane River WSS is a system supplemented by the Wivenhoe/Somerset storages. Tributary inflows below the dam are part of the system yield shared between all users. Irrigators' supply is made up of a small share of every Wivenhoe/Somerset Dam release, every tributary inflow, overland flow; and

(b) although Somerset Dam is nominally a separate scheme (the Stanley River WSS), it is part of the supply base that determines the safe yield provided for all users below the two dams.

The Authority considers that:

(a) MBRI's submission indicates that in fact charges were previously considered for the mid-Brisbane irrigators. However, these arrangements and the subsequent Cabinet decision are now long superseded by subsequent legislative arrangements;

(b) the Draft Report noted that 250ML per year of historically free water is provided to GVWB as HP Class A. Given the nature of its customers (reticulation to rural residential blocks) and the high reliability of this water, any contractual arrangements in place with GVWB are not relevant to pricing for MP Central Brisbane River WSS irrigation customers; and

(c) it is accepted that restrictions apply to irrigation under the water sharing rules and that these may apply when there are natural tributary flows available in the system. However, all users share in natural inflows in proportion to their entitlements. The Authority's cost allocation takes into account the water sharing rules and the restriction regimes that apply to irrigation.

In summary, the Authority accepts that water supplied to Central Brisbane River WSS irrigators is supplemented water. Irrigators in the scheme differ from other shared WSSs around the State only in that they have a very small share of the overall scheme WAE.

Process of Investigation

In response to stakeholder comments on the Authority's review process:

(a) in accordance with requirements of the *Queensland Competition Authority Act 1997* (the QCA Act), the Authority considered fully the issues relevant to the review, including all submissions received from stakeholders;

(b) the Authority has considered other relevant matters as appropriate. For example, the Authority has sought legal advice on matters not raised in submissions and written to the Director-General of DEWS and to Seqwater, seeking confirmation that the Authority's understanding of the current regulatory framework is correct. The Authority also requested in that correspondence any other relevant information, including copies of valid agreements with irrigators, pertaining to any pre-existing right to free water. At the time of finalisation of the report the Authority had not received a response;

(c) the Authority acknowledges that MBRI does not have the same resources as the Authority, but has endeavoured to support the submission making process by granting extensions whenever requested and undertaking all investigations considered relevant. The Authority, in the Draft Report did set out in some detail its understanding of the legal framework. Moreover, in addition to two rounds of scheme consultation, the Authority has met with representatives of MBRI whenever requested and at length; and

(d) the relevant elements of legal advice provided to the Authority are fully summarised in the Authority's Draft Report in a transparent manner.

Conclusion

The Authority received a total of 101 submissions from customers of the Central Brisbane River WSS. The majority stated that no charges should be levied for the 6,771 ML of irrigation medium priority WAE in this scheme.

The Authority received a late submission from MBRI (2013f) on 26 April 2013 after finalisation of the Final Report. The submission was not made in response to any invitation by the Authority to address substantive matters at this late stage.

The Authority notes that it has not had a proper opportunity to consider the late submission in the time frame required for the Final Report to be provided to the Ministers. The submission appears to address matters that have previously been addressed in the Authority's investigation and does not appear to address relevant new matters or provide relevant new evidence or material.

The Authority has not considered or addressed the matters raised in the late submission in its Final Report. The Authority notes that MBRI is free to bring the submission to the attention of relevant Ministers, who may wish to consider it in making a final decision.

The Authority has taken all relevant matters and submissions received prior to the finalisation of the Final Report into account and, on the basis of its understanding of the legislative framework considers that Seqwater is not prevented from recovering irrigation

water charges. Even if the Authority's understanding is not correct, the Authority has a statutory responsibility to recommend irrigation water charges as required by the Ministerial Direction, consistent with Seqwater's contractual right to impose such charges.

Moreover, the Ministerial Direction does not require the Authority to determine whether Seqwater is legally entitled to impose and recover irrigation charges in the Central Brisbane River WSS. This is a contractual matter between Seqwater and the irrigators, in the event that the Government determines such charges should apply.

4. RENEWALS ANNUITY

4.1 Introduction

Ministerial Direction

Under the Ministerial Direction, the Authority is required to recommend a revenue stream that allows Seqwater to recover prudent and efficient expenditure on the renewal and rehabilitation of existing assets through a renewals annuity.

The Ministerial Direction also requires the Authority to have regard to the level of service provided by Seqwater to its customers.

Previous Review

During the 2000-06 and 2006-13 price review, a renewals annuity approach was used to fund asset replacement, although this did not apply to Central Brisbane River WSS where irrigation customers were not charged for water use.

As discussed in Volume 1, the renewals annuity for each WSS was developed in accordance with the Standing Committee for Agriculture and Resource Management (SCARM) Guidelines (Ernst & Young 1997) and was based on two key components:

(a) a detailed asset management plan, based on asset condition, that defined the timing and magnitude of renewals expenditure; and

(b) an asset restoration reserve (ARR) to manage the balance of the unspent (or overspent) renewals annuity (including interest). In Central Brisbane, the opening balance of the ARR is zero.

The determination of the renewals annuity was then based on the present value of the proposed renewals expenditure minus the ARR balance.

For WSSs, other than Central Brisbane River WSS, the allocation of the renewals annuity between HP and MP users was based on water pricing conversion factors (WPCFs).

Issues

In general, a renewals annuity seeks to provide funds to meet renewals expenditure necessary to maintain the service capacity of infrastructure assets through a series of even charges. Seqwater's renewals expenditure and ARR balances includes direct, indirect and overhead costs (unless otherwise specified).

In the Central Brisbane River WSS, there is no carry-over ARR, and consequently, the ARR commences at 1 July 2013 with a zero balance. The key issues for 2013-17 for Central Brisbane River WSS are:

(a) the prudency and efficiency of Seqwater's forecast renewals expenditure;

(b) the methodology for apportioning renewals between MP and HP WAEs; and

(c) the methodology to calculate the renewals annuity.

The Authority's general approach to addressing these issues is outlined in Volume 1.

Seqwater has estimated that it has under management about 74 bulk water storage assets relevant to entitlement holders in the SEQ, including irrigators, local governments and industrial users. Seqwater (2012al) submitted that its asset management practices do not distinguish between irrigation and non-irrigation assets (that is, assets are managed as a portfolio and not on a sector basis).

Seqwater submitted that renewals and refurbishments are determined through a strategic asset management process. This process and its outcomes are documented in the Facility Asset Management Plans (FAMPs), which are being rolled out across all assets.

Seqwater submitted that irrigation assets are currently not as advanced in this process as the HP water treatment plants.

Seqwater proposes to renew some of Central Brisbane River WSS's assets over the regulatory period. Depending on their asset life, some are renewed a few times during the Authority's recommended 20-year planning period.

It was therefore not practicable within the timeframe for the review, nor desirable given the potential costs, to assess the prudency and efficiency of every individual asset.

The Authority relied on its consultant Sinclair Knight Merz (SKM) to comment upon Seqwater's renewals expenditure items. Across all schemes, a total of 12 forecast and two past renewals items were reviewed. The Authority also reviewed meter replacement costs.

The findings of these detailed reviews are considered for application where possible to other similar renewal items to determine the prudency and efficiency of this expenditure.

4.2 Seqwater's Opening ARR Balance (1 July 2013)

A renewals annuity approach requires ongoing accounting of renewals expenditure and revenue.

The opening ARR balance for 2013-17 (as at 1 July 2013) is based on the opening ARR balance for the current price path (1 July 2006), less renewals expenditure, plus renewals revenue and an annual adjustment for interest over the 2006-13 period.

Previous Review

The previous review did not apply to the Central Brisbane River WSS and consequently there is no ARR balance to review.

Draft Report

Stakeholder Submissions

Seqwater

Seqwater (2012al) submitted that the scheme does not have a renewals expenditure history because irrigation prices have not previously been levied. Seqwater indicated that the renewals opening ARR balance as at 1 July 2013 was zero for the Central Brisbane River WSS.

Other Stakeholders

No others stakeholders made submissions regarding this topic.

Authority's Analysis

Because there is no historical renewals expenditure, a comparison of forecast and actual direct renewals expenditure is not applicable for the Central Brisbane River WSS.

There is currently no renewals account for Central Brisbane River WSS. Accordingly, the Authority concludes that the balance as at 1 July 2013 will, therefore, be zero as proposed by Seqwater.

Submissions Received from Stakeholders on the Draft Report

During consultation in January (QCA 2013), stakeholders commented that a positive ARR balance should be maintained to reflect urban and industrial costs and revenues.

Authority's Response to Submissions Received on the Draft Report

The Authority confirms that the ARR balances only reflect irrigators' contributions, which in the past were zero. Accordingly, the Authority retains its recommendation that the opening balance is zero.

4.3 Forecast Renewals Expenditure

To calculate a renewals annuity, it is necessary to determine if forecast renewals expenditure is prudent and efficient.

Draft Report

Stakeholder Submissions

Seqwater

Seqwater submitted a summary of the significant proposed renewals expenditure items for the Central Brisbane River WSS as presented in Table 4.1.

Table 4.1: Forecast Renewals Expenditure 2013-17 (Real $'000)

Facility	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Wivenhoe Dam	0	120	195	35
Somerset Dam	170	120	60	140
Total	**170**	**240**	**255**	**175**

Source: Seqwater (2012as). Note: The Table contains items that have a higher than average value (HAV) and which would have an impact of 10% or greater on the annuity.

Significant items for 2013-17 are:

(a) Wivenhoe Dam – replacement of baulk seals on electrical winches - $100,000 in 2014-15;

(b) Wivenhoe Dam – repainting of trash screens - $80,000 in 2015-16;

(c) Wivenhoe Dam – refurbishment and replacement of cone valve seals - $100,000 in 2015-16;

(d) Somerset Dam – repainting of spillway crest gates, $75,000 in 2013-14 and $50,000 in 2014-15;

(e) Somerset Dam – replacement of electric winch motor and brake – spillway crest gates - $60,000 in 2016-17;

(f) Somerset Dam – repainting of spillway sluice gates - $75,000 in 2013-14 and $50,000 in 2014-15; and

(g) Somerset Dam – replacement of electric winch motor and brake – spillway sluice gates - $60,000 in 2016-17.

Additional major expenditure items from 2016-17 onwards are:

(a) refurbishment of gantry crane at Somerset Dam costing $3,000,000 in 2025-26; and

(b) refurbishment of structural walls, columns and beams of outlet works at Somerset Dam costing $3,250,000 in 2025-26.

Seqwater's forecast renewal expenditure items greater than $10,000 in value, for the years 2013-14 to 2035-36 are provided in Appendix A.

Other Stakeholders

QFF (2012) questioned whether any renewals projects at Wivenhoe and Somerset dams in 2012-13 and 2013-14 included flood related costs.

Stakeholders variously submitted that:

(a) planned renewals expenditure associated with Somerset and Wivenhoe dams does not relate to irrigation but rather flood control and domestic supply (J.M. Craigie 2012, RFPL 2012 and MBRI 2012); and

(b) the inclusion of both Wivenhoe and Somerset Dam renewals is incorrect as water volumes cannot be stored twice. Removal of Somerset Dam would make no difference to supply reliability for irrigators (Rivermead Pty Ltd (RPL) 2012a).

J.M. Craigie (2012a) submitted that Somerset Dam is infrastructure associated with the Stanley River WSS, not the Central Brisbane River WSS.

Authority's Analysis

The Authority commissioned SKM to review Seqwater's procurement, asset performance and condition assessment policies and procedures and to determine whether they represented good industry practice.

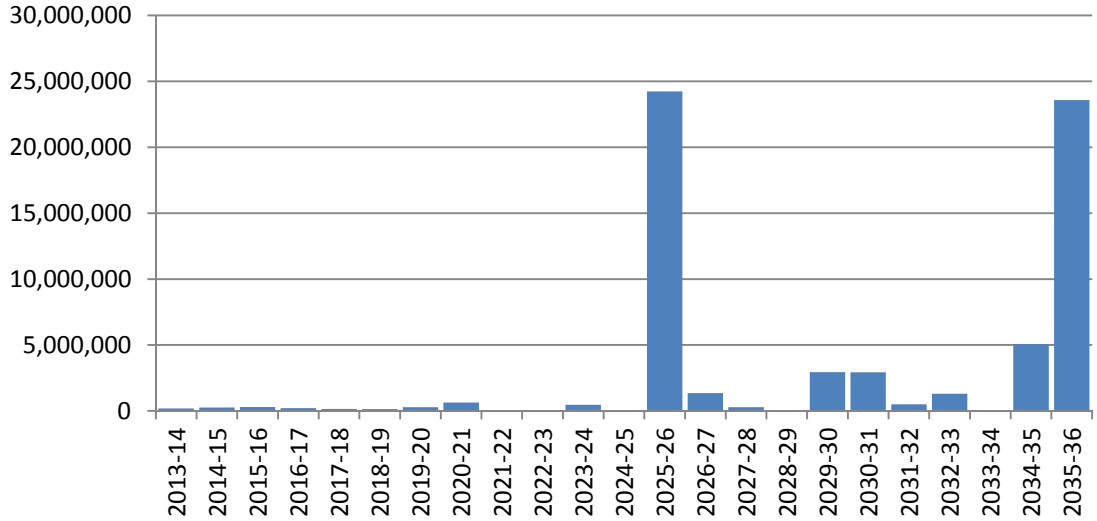
SKM concluded that although Seqwater may not currently have good asset condition information due to the lack of condition information transferred from previous operators, the policies and procedures Seqwater has adopted to assess the condition of its assets will rectify this situation over time. Accordingly, SKM considered Seqwater's approach represented good industry practice.

SKM concluded that Seqwater has made progress in developing robust asset management processes and procedures for comprehensive asset information.

Total Costs

Seqwater's proposed renewals expenditure for 2013-36 for the Central Brisbane River WSS is shown in Figure 4.1.

Figure 4.1: Forecast Renewals (Direct) Expenditure 2013-36 (Nominal $)



Source: Seqwater (2012as).

In response to the QFF's (2012) query whether flood related costs were included in forecast renewals expenditure, Seqwater confirmed (and the Authority verified) that irrigation renewals forecasts exclude any expenditure arising from the January 2011 floods. Seqwater also submitted that costs associated with any flood related damage are to be recovered, not from customers, but from Seqwater's insurer.

In response to stakeholders' submission regarding renewals expenditure relating exclusively to non-irrigation activities (and that Somerset Dam in particular contributes nothing to irrigator's reliability), the Authority noted the provisions of the Moreton ROP. Specifically, the Moreton ROP describes announced allocations for the Central Brisbane River irrigation (that is, MP WAE) being conditional on the combined useable volumes of Somerset and Wivenhoe dams. This provision confirms that the headworks of Somerset and Wivenhoe dams are required in supplementing water for the purpose of irrigation.

In response to J.M. Craigie's (2012a) submission that the assets of Stanley River WSS are not to be included in Central Brisbane River WSS, as discussed previously in section 1.2 the Authority accepted that the Moreton ROP combines the Central Brisbane River WSS (which include Wivenhoe Dam) with the Stanley River WSS (which includes Somerset Dam) for the purpose of defining water sharing rules and underpin the water supply reliability (and associated costs) of the Central Brisbane River WSS). Therefore, consistent with the Ministerial Direction, for the purpose of pricing, these costs were included in the Central Brisbane River WSS.

Item Reviews

SKM reviewed the prudency and efficiency for a sample of items across all Seqwater WSSs. Those of relevance to the Central Brisbane River WSS are discussed below.

Items reviewed included:

(a) a specific item sampled in the Central Brisbane River WSS (Item 1); and

(b) items reviewed in other WSSs where the conclusions were considered by SKM to be appropriate for application to the Central Brisbane River WSS (Items 2 to 4).

Item 1: Somerset Dam - Inlet and Outlet Works

Draft Report

Seqwater submitted that this renewals item is scheduled to occur in 2025-26 and involves the refurbishment of structural walls, columns and beams at Somerset Dam at a cost of $3,250,000.

Other Stakeholders

No other stakeholders made comment regarding this item.

Consultant's Review

Project Description

The Somerset Dam inlet screen structures comprise two reinforced concrete structures that are approximately 35 metres high, 16 metres wide and eight metres proud of the upstream face of the dam. They are located in front of the cone valve inlets. The structures are fully submerged when the dam is at full capacity.

The scope of refurbishment will depend on the nature of the deterioration when the project is carried out and could range from refurbishment of the concrete surfaces through to replacement of the structure. Refurbishment will require detailed options analysis conducted due to the complex nature of the work. Methodology options may include timing the work to coincide with low dam levels, draining the dam to provide dry access, undertaking the work using industrial divers or constructing coffer structures.

SKM was not aware of any component of the costs being attributed to damage from the 2010-11 floods.

Project Status

Expenditure is scheduled for 2025-26. In the Seqwater Asset Delivery Framework, the Concept and Feasibility stage is classified as pre-implementation, meaning prior to the preliminary design. SKM considered the current position of the project in the Seqwater Asset Delivery Framework as appropriate given the value and timing of this renewals project.

Documentation available included asset valuation and condition assessments undertaken by consultants Cardno in 2010. SKM considered the level of documentation available to be consistent with the current position of the project.

Provided Documentation

The documents used for this review are:

(a) Information Request Response – QCA Irrigation Price Review 2013-17: RFI010 Somerset Dam – Trash Screen Structures, Seqwater, 10 August 2012; and

(b) Valuation of Dams & Weirs as at June 2010, Cardno, July 2010.

Prudency

Seqwater identified the inlet screen structures as essential to the safe operation of Somerset Dam as they house the trash screens which protect the outlet structures from fouling with debris. The upkeep of the inlet screen structures is relevant to obligations with respect to dam safety regulatory requirements given Somerset Dam is a reportable dam in accordance with the provisions of the *Water Safety (Safety and Reliability) Act 2008*.

As the project is not due to be implemented until 2025-26, it is currently at the concept phase. Seqwater indicated that a formal condition assessment and detailed options analysis is scheduled to be completed more contemporaneously with the expected end of the asset life in the Validation and Planning phase of Seqwater's Asset Delivery Framework. SKM considered that the replacement of an asset based on the results of an adequate condition assessment and options analysis represent good industry practice.

SKM recommended that Seqwater undertakes a condition assessment and options analysis, prior to the implementation of the project as proposed.

Timing of asset replacement or refurbishment

The Somerset Dam, including the inlet screen structure was constructed in 1955, and hence is currently 57 years old. The renewal of the inlet structure is based on a 70 year asset life, which aligns to the planned renewal in 2026-27.

Seqwater's standard useful asset life for dam civil infrastructure is 200 years. However, within the Valuation of Dams & Weirs report (Cardno, 2010) a specific asset life of 70 years has been used for the Somerset Dam Inlet Structure.

SKM believed that whilst the age of an asset is a useful indicator for renewal timing, actual timing of replacement should be based on the condition of the asset, and risk of asset failure.

The inlet structure is below the water line on the upstream face of the dam. Hence, the structure is not readily accessible for inspection and condition assessment. Seqwater noted in its response to SKM's requests for information that condition assessment will be undertaken prior to the proposed construction works.

SKM understood the timing for the works is largely determined by the remaining asset life. Seqwater advised that the timing of the works would coincide with the date of regulated upgrade of the dam, set for 2025. The regulatory upgrade is likely to require major upgrade to the downstream protection works of the dam. Combining the refurbishment of inlet structure and the regulated upgrade is likely to provide cost efficiencies for the construction works.

In SKM's opinion, relying on a specified asset life to program refurbishment is cursory. The asset life of a concrete structure predominantly submerged in water will depend on a range of factors including concrete mix design, the depth of cover to reinforcement (how far from the surface of the concrete the reinforcing bars are), wetting and drying cycles, and the

salinity of the water. SKM's recommended approach, generally, is to use prescribed condition assessments and risk of failure of a particular asset to inform the need and timing of asset refurbishment.

SKM noted that whilst the exact scope of work is yet to be fully defined, if replacement of the inlet is required, dry working conditions is highly preferable. Using divers or submersibles for construction could prove impracticable and would increase costs. Hence, taking the opportunity to complete the work at the same time as the regulatory upgrade, (when water levels are likely to be lower) would lead to cost savings.

Efficiency

The minimum practical requirements for the inlet screen structure include the capability to prevent debris from entering the dam inlet under all conditions. If debris were to become lodged in the inlet structure this may prevent Seqwater from opening and closing the cone valves, which are the primary means of conveying water downstream. The specific standards will depend on the exact scope of works (e.g. refurbishment versus replacement).

The project cost is based on the replacement of the asset as noted in Valuation of Dams & Weirs report (Cardno 2010). A breakdown of this cost was not available. However, the Cardno report stated that the valuation methodology was based on numerous factors including asset registers, drawings, data books, condition reports, site inspections and recent contract and estimation data.

SKM prepared a comparative cost estimate as shown in Table 4.2.

Table 4.2: SKM's Comparative Cost Estimate

	Item	*Cost*
Direct Costs[2]	Design (Civil)	320,000
	Contractor Preliminaries and Site Establishment	60,000
	Supply and Construct (coffer dam around each inlet structure)	1,248,000
	Demolition	42,000
	Supply and Construct (new concrete inlet structure)	144,000
	Supply and Construct (allowance for modification/fitting of inlet screens)	130,000
Indirect Costs	Approvals and Procurement (20%)	389,000
	Risk (20%)	389,000
	Supervision	150,000
	Project Management Costs	50,000
	Total	**$2,922,000**

Source: SKM (2012).

SKM's comparative cost estimate included a contingency allowance that reflects the unknown items at this stage of the project. The SKM cost estimate has an allowance for risk of 20%. Undertaking construction works on the upstream face of a dam attracts significant risks, specifically: latent conditions, potential flooding and geotechnical issues.

SKM noted that risk and contingency have not been included within other comparative cost estimates. In SKM's opinion it is good engineering practice (as represented by the Association of Advancement of Cost Engineering International) for these items to be included in cost estimates given that the level of project definition is very low at this stage. As further studies, optioneering and investigations are completed by Seqwater it is expected that risk and contingency sums will reduce.

As previously stated, cost savings could be achieved if the works are undertaken at the same time as the regulated upgrade of the dam, when the lake level is lower. However, these works will be undertaken on the upstream side of the dam and it would be necessary to protect the works with a coffer dam (temporary earth dam) around each inlet, in the event of flooding.

The Seqwater estimate for the project was within 30% of the SKM's estimates and was therefore considered efficient.

Conclusion

The operation of Somerset Dam is required to operate the Central Brisbane River WSS and fulfil legal requirements. SKM considered the timing of works is accurate and scope of works is reasonable for this level of project definition.

[2] A contingency allowance of approximately 30% has been built into direct costs.

In addition, the standards of work and project costs are considered accurate.

Accordingly, SKM considered Seqwater's revised cost estimate of $3,251,000 to be prudent and efficient.

Submissions Received from Stakeholders on the Draft Report

MBRI (2013d) submitted that the sluice gates are part of flood infrastructure and are not relevant to the review. Also, costs relating to hydro-electricity should be excluded. MBRI considered that only one regulator valve at Somerset Dam should be included as the other three are part of flood infrastructure.

MBRI suggested that as flood capacity of Somerset Dam is 750,000ML or 66% of the total storage of 1,129,800ML, the costs should be reduced by 66%.

Authority's Response to Submissions Received on the Draft Report

The Authority accepts SKM's recommendation that the proposed expenditure is prudent and efficient. Nevertheless, the Authority generally accepts the principle that flood mitigation costs should not be passed through to irrigators. The relevant principles and basis for the Authority's recommended adjustment (56%) are discussed further below.

Item 2: Telemetry – Wivenhoe Dam

Draft Report

Seqwater submitted that this renewals item is scheduled to occur in 2031-32 at a cost of $282,000.

Other Stakeholders

No other stakeholders commented on this item.

Consultant's Review

SKM reviewed directly two similar proposed telemetry projects – namely, telemetry at Cedar Pocket Dam (of the Cedar Pocket Dam WSS) and at Bromelton Weir (of the Logan River WSS). In both reviews, SKM considered the proposed expenditure to be prudent and efficient.

SKM was requested to indicate whether the conclusions for the reviewed telemetry items could be applied to the Wivenhoe Dam example. However, SKM reported that the Central Brisbane River WSS project relates to Wivenhoe Dam and Seqwater's estimated cost ($282,000) indicates the work is on a scale not comparable to that at Cedar Pocket Dam ($34,000) or Bromelton Weir ($35,000).

Therefore, SKM considered it impractical to apply the results of the two directly reviewed telemetry projects to that proposed at Wivenhoe Dam.

Authority's Analysis

The Authority noted the outcome of the SKM review that the results of the two directly reviewed telemetry projects cannot be considered for application to the Central Brisbane River WSS. The Authority therefore considered the item to be unsampled and applied a 13% saving.

Submissions Received from Stakeholders on the Draft Report

MBRI (2013d) submitted that the Authority's approach of applying the 13% efficiency reduction to this unsampled item was unsustainable as it is not known whether the expenditure is due to flood damage or whether its primary function relates to flood mitigation. The telemetry system is of no value to irrigators as it is not used to control flow to irrigators or to manage water harvesting.

Authority's Response to Submissions Received on the Draft Report

The Authority's 13% adjustment relates to efficiency gains rather than a cost attribution between user groups. The issue of cost sharing to take account of flood mitigation costs is considered separately below.

Item 3: Trash Screen Projects

Draft Report

Seqwater submitted that these renewals items are for:

(a) refurbishing the trash rack at Wivenhoe Dam in 2015-16 at a cost of $80,000;

(b) replacing spares in a sand blasting shed at Somerset Dam in 2025-26 at a cost of $175,000; and

(c) replacing trash screens at Somerset Dam in 2025-26 at a cost of $1,399,000.

Other Stakeholders

No other stakeholders provided comment regarding these items.

Consultant's Review

SKM reviewed in detail a similar trash screen refurbishment project in the Clarendon Diversion (of the Central Lockyer Valley WSS). Given project similarities, SKM considered applying the results of this review to other trash screen projects proposed by Seqwater (including those at Somerset Dam and Wivenhoe Dam).

SKM concluded that the proposed periodic refurbishment of corrosion protection on the Clarendon Diversion trash screens to be prudent and efficient.

However, SKM noted that the trash screen projects proposed by Seqwater range significantly in cost. As an example, trash screens at Clarendon Diversion are forecast to be $45,000 while for Somerset Dam the total cost is $1,574,000. In addition, there are a number of variables including design, size, location (that is, pump station, weir and dam), site specific conditions (such as flow of creek/river/dam) and whether the renewals expenditure is for replacement or refurbishment.

Therefore, SKM considered it impractical to apply the findings of the Clarendon Diversion trash screens review to determine the prudency and efficiency of the proposed trash screen expenditure associated with the Central Brisbane River WSS.

Authority's Analysis

The Authority noted the outcome of the SKM review that the proposed expenditure associated with Item 3, cannot be assessed on the basis of findings in other schemes. The Authority therefore considered the item to be unsampled and applied a 13% saving.

Submissions Received from Stakeholders on the Draft Report

MBRI (2013d) submitted that the scope of works is not known. Trash screen costs associated with the hydro plant should be excluded. As only one regulator valve is relevant to irrigation supply, the trash screens associated with only one regulator should be included.

MBRI (2013d) also suggested that it is not prudent or efficient if trash screens could be refurbished rather than replaced.

Authority's Response to Submissions Received on the Draft Report

The Authority has not specifically reviewed the trash screen expenditure and SKM could not ascribe the findings from Central Lockyer trash screens to Central Brisbane River WSS. Therefore the Authority was unable to assess whether refurbishment or replacement are appropriate. The reduction factor applied to all unsampled items was therefore applied.

The issue of cost sharing to take account of flood mitigation costs is considered below.

Item 4: Metering

Draft Report

Seqwater

It is the Authority's understanding that Seqwater consider that there are four issues associated with metering Central Brisbane River WSS irrigators – namely:

(a) where meters are currently in place, ensuring that meters meet an acceptable standard and installation has been undertaken in an appropriate manner (such as consistent with manufacturers' instructions and in accordance with Seqwater's Workplace Health & Safety obligations). Costs associated with:

  (i) checking existing meters constitute direct (repairs and maintenance) operating costs and are reflected in Seqwater's proposed tariffs outlined in the NSP; and

  (ii) replacing meters to meet an acceptable standard, are *not* recovered by tariffs outlined in the NSP;

(b) where meters are currently not in place, installing new (first time) meters in an appropriate manner. Seqwater have submitted that these costs are not recovered by the tariffs outlined in the NSP;

(c) the practicalities (and relative benefits and costs) of installing (and regularly reading) meters where irrigators have relatively modest nominal WAE; and

(d) the replacement of meters at the end of their 10 year economic lives.

Other Stakeholders

QFF (2012) questioned that if costs to meet national metering standards are eventually to be introduced and recovered as an end-of-period adjustment, what steps will be taken to assess the relative costs and benefits of implementing these standards.

Irrigators variously submitted that:

(a) the costs incurred by irrigators to address damage caused by the 2011 floods has made them reluctant to accept any cost increases relating to the installation/replacement of water meters (QCA 2012c and LDGCI 2012);

(b) irrigators are concerned that metering costs (up to $9,000 to install a new meter to meet new national metering standards) may not be justified given the relatively modest WAE (in some instances 10 ML) held by some irrigators (QCA 2012c and LDGCI 2012);

(c) having a modest variable (Part B) tariff leads to the dilemma of justifying expenditure associated with installing/replacing meters (particularly a meter that complies with the national metering standard) (QCA 2012c); and

(d) irrigators are seeking Government and/or Seqwater policy regarding (QCA 2012c) -

    (i) what standard of meter will be implemented (equivalent to the current standard or the higher national meter standard);

    (ii) what is the timeframe for meter installation; and

    (iii) what alternative funding arrangements are available.

In addition, J.B. and B.L. Keller (2012) submitted that the only costs irrigators should be responsible for are meter reading and billing, subsequent to them being installed. Installation should not be a cost borne by irrigators.

Consultant's Review

SKM reviewed in detail metering associated with other schemes. The results of this review were considered for application to the Central Brisbane River WSS. However, because Seqwater had not developed a metering business case specific to Central Brisbane River WSS, the results could not be applied.

Authority's Analysis

Seqwater has not submitted an estimate of replacing meters that have been assessed as not being of an acceptable standard. Seqwater's new (first time) metering costs in the Central Brisbane River WSS have also not been submitted to the Authority. A business case specific to Central Brisbane River WSS (identifying how many meters to install and the associated costs to be recovered) had not yet been finalised by Seqwater.

As a consequence, the Authority's consultant SKM could not review new or replacement meters.

In response to Seqwater:

(a) costs will be incurred in checking existing meters to ensure installation is appropriate. The Authority considers these to be genuine direct operating costs recovered through

tariffs. Where existing meters are to be replaced due to not meeting an acceptable standard, the Authority noted that these costs were not reflected in the NSP and that Seqwater is considering options for their recovery. The Authority considered that if existing meter replacement costs were to be passed on to irrigators, then this should be done through the renewals annuity program, consistent with other WSSs;

(b) as Seqwater currently has no metering business case for Central Brisbane River WSS that identifies the number of existing meters to be replaced (due to not meeting an acceptable standard) and the installation of new (first-time) meters, the Authority allowed zero costs for replacement/new meters (this impacts proposed metering costs – refer (d) below);

(c) the Authority noted that Queensland is signatory to the National Water Initiative (NWI), which seeks metering to be undertaken in circumstances that include:

(i) for entitlements identified in a water planning process as requiring metering; and

(ii) where WAE are traded.

As the Moreton ROP allows for WAE in the Central Brisbane River WSS to be traded, a case can be made that where individual irrigators are buying (not necessarily selling) WAE then the buyer should be metered. Currently, for this reason, Seqwater may not approve a trade where the buyer is not metered. In general the Authority supported such an approach (in relation to the WAE buyer).

However, the Authority was also mindful of the need for expenditure to be warranted (prudent and efficient). The Authority, therefore, considered that Seqwater should develop and provide for consultation a policy on which customers require new meters. This policy should include consideration of the relative costs and benefits (along with the practicalities of installing and reading meters), particularly where irrigators have modest nominal WAE[3] and/or no pumping infrastructure. The Authority noted from issues arising from Round 1 consultation (QCA 2012c) that certain irrigators lost such infrastructure during the 2010-11 floods and (for various reasons) have not re-established the capacity to take water. The Authority's view was that such irrigators should not be required to install meters until irrigation recommences (if ever); and

(d) in addition, the Authority noted in Seqwater's irrigation pricing model (but not the NSPs), that Seqwater has assumed up to 85 meters (at $1600 per meter) will be replaced at a cost of $136,000 (real) from 2022-23 to 2036-37. This high number of replacements reveals Seqwater's current (implicit) assumption about the number of meters currently in place and, particularly, new meters it will have installed prior to 2022-23. However, for the reasons outlined above, the Authority recommended that this cost be reduced to zero as no consideration has been given to how many meters currently, or will ultimately, exist. To allow replacement costs of this extent at this time would pre-empt any such review by the Authority.

If Seqwater were to submit a metering business case specific to Central Brisbane River WSS as part of comments provided on the Authority's Draft Report, it may be in Seqwater's interests to note that the Authority accepted SKM's recommendation that the economic life of a meter is not 10 years (as proposed by Seqwater) but rather 15 years.

[3] Several irrigators have nominal WAE of one and two ML.

In response to the stakeholder submissions, the Authority noted that:

(a) any costs being proposed by Seqwater to comply with national metering standards are *not* to be included in prices; and

(b) given that expenditure associated with metering needs to be prudent and efficient, a policy associated with the installation of new (first time) meters and the replacement of existing meters (to meet an acceptable standard), is to be established by Seqwater in consultation with customers. This policy is to address those issues of concern to irrigators which includes:

   (i) establishing a rationale (potentially based on the relative costs and benefits) for installing meters where there is modest WAE;

   (ii) establishing an appropriate timeframe for meter installation/replacement; and

   (iii) considering funding options (including the practicalities of Government providing a CSO).

Submissions Received from Stakeholders on the Draft Report

MBRI (2013d) submitted that metering is not the only system available to Seqwater to monitor use. MBRI has initiated a comprehensive log-book system that provides information that could be taken into account.

MBRI considered that Seqwater has failed to mount a business case for metering in the scheme. The cost of compliant meters could be $10,000 for purchase, installation and maintenance over its working life, representing about $100/ML per year for about half of MBRI irrigators.

MBRI proposed that Seqwater install meters at no additional cost to irrigators, on the basis that this could drive efficiencies in the system. For small irrigators, MBRI suggested log-books or restricted pump capacity.

Authority's Response to Submissions Received on the Draft Report

The Authority considers that log-book methods are not generally reliable although they may be suitable as an alternative to meters for irrigators holding small volumes of WAE. The Authority agrees that the cost of installing meters could exceed the benefits.

Conclusion

As noted above, Seqwater has not submitted an estimate of the cost of replacing existing, or installing new meters for the first time. Accordingly, no costs for meters are included in Central Brisbane River WSS.

Conclusion

Draft Report

Sampled Items

In summary, one item was sampled for detailed review (that is, the inlet and outlet works at Somerset Dam) and found to be prudent and efficient.

Three other reviews undertaken by SKM in other schemes were considered for application to the Central Brisbane River WSS.

While proposed expenditure on telemetry at Cedar Pocket Dam (of the Cedar Pocket Dam WSS) and at Bromelton Weir (of the Logan River WSS) were found by SKM to be prudent and efficient, SKM's conclusions could not be translated to Central Brisbane River WSS.

In addition, while proposed expenditure on refurbishment of corrosion protection on the Clarendon Diversion trash screens (Central Lockyer WSS) was found by SKM to be prudent and efficient, SKM's conclusions could not be translated to Central Brisbane River WSS.

These two items, therefore, were categorised as non-sampled items and subject to the appropriate implied cost saving (see below).

Non-Sampled Forecast Renewals Expenditure

As discussed in Volume 1, the Authority was unable to comprehensively review all past or forecast renewals expenditure for prudency and efficiency. Accordingly, the Authority drew on the results of consultant reviews, as detailed below.

The direct (non-metering) forecast renewals cost savings identified by SKM are summarised in Table 4.3.

Table 4.3: Summary of SKM Findings on Forecast (Non-Metering) Renewals

Number of Items Sampled	*Value Sampled (Real $'000)*	*Variance to SKM Estimate (Real ',000)*	*Average Saving Identified (%)*
11	5,079	(681)	13

Source: QCA (2012). Note: Number of items sampled excludes sampled items for which insufficient information was available to reach a conclusion.

The 11 (non-metering) forecast renewals items reviewed account for an average across the schemes of some 20% of the total forecast irrigation renewals expenditure being directly reviewed with SKM's findings also applying to similar asset, taking the sample size to in excess of 30%.

The identified errors in Seqwater's renewals expenditure forecasting approach were considered to be systemic. Hence, the Authority considered it likely that the non-sampled renewals expenditure proposed by Seqwater will be similarly overstated.

In summary, the net variance between Seqwater's initially submitted (non-metering) forecast renewals costs and the efficient SKM cost estimate of $0.68 million is the appropriate basis for the Authority's cost savings to be applied to non-sampled items.

The net variance of $0.68 million, expressed as a portion of Seqwater's initially submitted sampled forecast expenditure of $5.08 million, resulted in a 13.35% implied cost saving. A similar proportion was found when a weighted average was calculated to take account of the sampled, small, medium and large projects. The Authority therefore applied a 13% (rounded) generic cost saving to unsampled forecast renewals items. Details are provided in Volume 1: Chapter 5.

Submissions Received from Stakeholders on the Draft Report

Sampling

MBRI (2013d) did not accept the renewals sampling methodology adopted by the Authority. Proper stratified random sampling was not undertaken and the correct population of renewals items was not identified for assessment, that is, it included flood mitigation assets and hydro-electricity related assets. MBRI suggested that separate lists of assets be made – based on hydro-electricity, water storage, flood storage, assets serving a combination of two or more of these purposes, and other (for example, recreation).

MBRI also commented that the size and scale of the Central Brisbane River WSS as a share of all the Seqwater WSSs justified a more intense assessment with a greater coverage of items. Of the 12 items selected for review by SKM, only one was in Central Brisbane River WSS and related to the year 2026. By comparison, the Authority selected six items in the Central Lockyer, a scheme which accounts for only 4% of proposed expenditure.

SKM Conflict of Interest

During consultation in January (QCA 2013), stakeholders were concerned that engineering consultants SKM had a conflict of interest given they were engaged by Seqwater to provide advice to Seqwater as part of the recent flood commission. MBRI (2013d) also commented that SKM is not independent and their advice should not be used for QCA findings.

Authority's Response to Submissions Received on the Draft Report

Sampling

The Authority considers that a larger sample, would capture many small items, and would incur regulatory costs out of proportion to the scale of the irrigation businesses and revenues being reviewed. The Authority's approach did in effect stratify the items reviewed, by WSS and by asset type to ensure coverage. The sampled items were selected having regard to materiality, item type, and/or on the basis of concerns raised by stakeholders.

In the circumstances, the Authority considers that the risk of sample bias is limited as the selected items constituted a significant proportion of the total assets (55%).

In regard to the proposal to list the population of items according to purpose, the Authority considers that as the renewals annuity charged through to irrigators is relatively small a proportion of total irrigation share of costs (<10%), a more cost-effective method is to apply an apportionment to the calculated annuity (discussed further below).

SKM Conflict of Interest

SKM formally advised the Authority prior to the commencement of the consultancy in July 2012 that there was no conflict of interest. In response to comments made during consultations, the Authority sought further advice from SKM (2013) to establish whether there was any conflict of interest with any other engagements undertaken by SKM.

SKM confirmed that until the conclusion of the engagement with the Authority, it has not provided advice to Seqwater in relation to any of the capital projects or operational cost areas reviewed. SKM considered that its report constituted an impartial and independent assessment of the prudency and efficiency of the cost items reviewed based on objective criteria and independent information, analysis and resources, and that there has been no conflict of interest. The Authority is satisfied with SKM's assurances in this regard.

Final Report Conclusion

The Authority proposes no change to its Draft Report conclusions in regard to sampled and unsampled renewals items.

The Authority recommended the direct renewals expenditure be adjusted as per Table 4.4.

Table 4.4: Review of Forecast (Direct) Renewals Expenditure 2013-36 (Real $'000)

	Item	*Year*	*Seqwater*	*Authority's Findings*	*Recommended*
Sampled Items					
1.	Inlet and Outlet Works	2025-26	3,251	Prudent and efficient	3,251
Results Applied from Other Reviews					
2.	Wivenhoe Dam - Telemetry	2031-32	282	Results could not be applied to assess prudency or efficiency– 13% saving applied	245
3.	Trash Screens Projects	2015-16	80	Results could not be applied to assess prudency or efficiency - 13% saving applied	70
		2025-26	175	Results could not be applied to assess prudency or efficiency – 13% saving applied	152
		2025-26	1,399	Results could not be applied to assess prudency or efficiency - 13% saving applied	1,217
4.	Metering	various	136	Withdrawn by Seqwater	0
Non-Sampled Items					13% saving applied

Source: Seqwater (2012as), SKM (2012) and QCA (2012, 2013).

4.4 Seqwater's Consultation with Customers and Reporting

Draft Report

Stakeholder Submissions

QFF (2012) noted that although Seqwater has evaluated potential projects against criticality and other criteria, conducted workshops with local staff, and inspected sites, it [Seqwater] has yet to consult with irrigators about forecast renewals expenditures.

QFF (2012) submitted that irrigators are concerned about the lack of consultation that has occurred since schemes were transferred to Seqwater in 2008-09 and considered that structured consultation will achieve scheme efficiencies. Irrigators are keen to consider costs associated with consultation options, such as comparing:

(a) Seqwater's current consultation agenda;

(b) the annual reporting of costs to irrigators only when there are significant variations in operating and renewals forecasts; and

(c) formal advisory committees being established (similar to SunWater's approach) with quarterly meetings.

Authority's Analysis

In Volume 1, the Authority noted customers' concerns about the lack of involvement in the planning of future renewals expenditure and that this has been raised by irrigators and their representatives. These concerns were generally expressed throughout Seqwater's WSSs.

The Authority recommended that there be a legislative requirement for SunWater to consult with its customers about any changes to its service standards and proposed renewals expenditure program. The Authority considered that this approach should also be adopted by Seqwater.

In addition, Seqwater should also be required to submit renewals expenditure programs to irrigators for comment whenever they are amended and that irrigators' comments be documented and published on Seqwater's website and provided to the Authority.

Submissions Received from Stakeholders on the Draft Report

Seqwater (2013a) submitted that the *South East Queensland Water (Restructuring) Act 2007* provides in Section 51A, for the responsible Ministers to issue a Statement of Obligations to Seqwater. Section 51C includes provisions for customer consultation. Seqwater advised that a Statement of Obligations including a requirement to consult has been issued to Seqwater.

In subsequent advice Seqwater (2013b) proposed that the annual costs for renewals options analysis would be $12,546 for the Central Brisbane River WSS. In addition, a cost of $3,430 would be incurred to develop NSPs each year and $3,570 to establish and run a Scheme Advisory Committee for the scheme as a whole.

Seqwater (2013c) later submitted that as an alternative to options analysis, a more cost efficient approach would be to establish scheme advisory committees and for Seqwater to present its renewals estimates to these committees for information and discussion. Renewals estimates would also be published in NSPs.

MBRI (2013d) submitted that consultation carries a cost, and there should be a cost-value consideration.

Authority's Response to Submissions Received on the Draft Report

Options Analysis

While the Authority considers that high-level options analysis and more detailed options analysis should be undertaken where the proposed renewals represent more than 10% of the

net present value of total forecast renewals expenditures, the relative benefit and cost of doing so are also relevant.

In the Central Brisbane River WSS, the options analysis cost represents a substantial proportion of the annual renewals charge.

Irrigation customers – in consultation with Seqwater through advisory committees – are best placed to assist Seqwater to decide whether options analysis of particular items should occur and the nature of the analysis. Less complex analysis (tailored to reflect the benefits and costs of the analysis) may suffice for smaller projects. In some circumstances, none may be required [for example, where the Authority has previously reviewed a proposed expenditure].

The nature of the high level and detailed options analysis must be tailored to take into account the benefits and costs associated with the proposed project. This is a decision best made by Seqwater, but in consultation with irrigation advisory committees.

The Authority would consider an application for an end-of-period adjustment to prices, to allow Seqwater to recover associated costs.

NSPs and Consultation

The Authority notes that Seqwater's Statement of Obligations explicitly requires Seqwater to consult with irrigation customers. It does not specify that such consultation should occur (at least) annually. The Statement of Obligations also includes a provision that requires it to be made public.

However, to achieve certainty that (at least) annual consultation with irrigators will take place throughout 2013-17 [and beyond], Seqwater's Strategic and Operational Plans should be amended to make this a requirement.

The Authority has considered the submitted costs for Seqwater to enhance the NSPs and establish and support irrigation advisory committees, and considers them to be reasonable.

NSPs should contain annual updates detailing Seqwater's proposed renewals (and operating) expenditure items and accounting for significant variances between previously forecast and actual material renewals expenditures.

The total annual cost of NSP preparation and consultation committees is about $7,000 for Central Brisbane River WSS and is treated as a fixed irrigation only direct bulk (operating) cost. This cost should be allocated only to irrigators. The information, transparency and face-to-face contact with Seqwater will primarily (and most likely exclusively) benefit irrigators, as urban and industrial prices are subject to a long-term price path set by Government that is not subject to amendment via scheme consultation.

The precise details of consultation for each WSS should be decided by Seqwater in consultation with irrigators. In general, the benefits of consultation will justify the relatively small costs.

4.5 Allocation of Headworks Renewals Costs

Previous Review

Because no charges applied to the 6,771 ML of MP WAE made available for irrigation during the 2006-11 price path, there was no need to apportion renewals costs between MP and HP WAE.

However, given Seqwater intends to levy tariffs as of 1 July 2013, there is now a requirement that a methodology be established.

Draft Report

Stakeholder Submissions

Seqwater

For the 2013-17 regulatory period Seqwater proposed that renewals and maintenance costs for bulk water infrastructure be apportioned in accordance with the headworks utilisation factor (HUF), which is a hydrological assessment of the percentage of utilisable storage dedicated to each entitlement/priority group. Specifically, the HUF methodology takes into account water sharing rules, critical water sharing arrangements (CWSAs) and other operational requirements that typically give HP entitlement holders exclusive access to water stored in the lower levels of storage infrastructure.

This methodology, discussed in detail Volume 1, can be summarised as follows:

Step 1: Identify the water entitlement groupings for each scheme and establish which groups are to be considered as HP (HP) and MP (MP).

Step 2: Determine the volumes associated with the HP and MP groupings identified in Step 1, taking into account any allowable conversion from MP to HP under the scheme's ROP.

Step 3: Determine the extent to which water sharing rules, CWSAs and other operational requirements give the different water entitlement priority groups exclusive or shared access to capacity components of the storage infrastructure.

This step divides the storage infrastructure into three levels: the bottom layer, which is exclusively reserved for HP; the middle layer, which is effectively reserved for MP; and the top layer, which is shared between the MP and HP groups.

Step 4: Assess the hydrological performance of each headworks' storage using Integrated Quantity and Quality Modelling (IQQM) to determine the probabilities of each component of headworks storage being accessible to relevant water entitlement priority group during periods of low storage (under critical water sharing rules).

Step 5: Determine the HUFs derived from the above process using the SunWater method. Calculations are based on 10, 15 and 20 year drought periods for comparative analysis.

The results of applying this methodology are outlined below in Table 4.5.

Table 4.5: Summary of HUF Methodology

Drought Period	*Drought Period From Storage Volumes*		*Drought Period From Inflows*	
	Medium Priority (%)	*High Priority (%)*	*Medium Priority (%)*	*High Priority (%)*
10 year	67	33	71	29
15 year	69	31	71	29
20 year	69	31	69	31

Source: Parsons Brinckerhoff (2012).

However, engineering consultants Parsons Brinckerhoff (PB), commissioned by Seqwater to calculate a HUF percentage for each scheme, found that a strict application of this methodology resulted in a perverse outcome for the Central Brisbane River WSS. As an example, as outlined above in Table 4.5, the HUF for MP represents 69% even though urban supply accounts for approximately 98% of WAE.

As a result, PB suggested an alternative, "adjusted HUF" calculation methodology which takes into account the ratio between MP customers (equivalent to 7,041 ML of WAE) and HP customers (equivalent to 279,000 ML of WAE) adjusted for the level of useable volume where MP announced allocations are zero. Accordingly, PB proposed the following:

$$\left(\frac{7{,}041}{279{,}000}\right) \times (100 - 14.9) = 2.1$$

Accordingly, Seqwater's proposed allocation of renewals and maintenance costs to MP customers in the Central Brisbane River WSS is the "adjusted HUF" of 2.1%.

Other Stakeholders

QFF (2012) submitted that the HUF assessment to allocate renewals for Central Brisbane River WSS needs urgent peer review, particularly the interpretation of the application of water allocation security objectives (WASOs).

Authority's Analysis

The Authority noted Seqwater's submission that the initial HUF calculated by PB has resulted in a perverse outcome for the Central Brisbane River WSS.

The Authority reviewed Seqwater's alternative "adjusted HUF" methodology provided by PB which is based on the single trigger of 14.9% of useable volume corresponding with MP allocations being reduced to zero. However, the Moreton ROP prescribes a range of triggers which represent a progressive reduction in MP allocations once the useable volumes in Somerset and Wivenhoe dams reach less than 50% (Table 4.6 refers).

Table 4.6: Useable Volume Scenarios and Corresponding Announced Allocations

Useable Volume in Storage of Wivenhoe and Somerset dams (%)	*Announced Allocation for MP WAE (%)*
0 to 14.9	0
15 to 24.9	15
25 to 29.9	25
30 to 34.9	40
35 to 39.9	55
40 to 44.9	70
45 to 49.9	85
50 to 100	100

Source: DERM (2009a).

The Authority noted that, as outlined in Table 4.6, announced allocations associated with MP are reduced progressively over a range of useable volume scenarios and not just when the less than 15% trigger is met.

Accordingly, the Authority considered that a more appropriate approach would be to include reference in the HUF calculation to this range of scenarios (i.e., the announced allocations for irrigation users can be reduced progressively once storage levels fall below 50%).

Therefore, the Authority adopted an amended factor of 35% which represents the median restrictions category between the 50% (which triggers the commencement of reducing MP announced allocations) and the 14.9% (which triggers zero MP announced allocations). Applying PB's "adjusted HUF" methodology with the Authority's median, the following was proposed:

$$\left(\frac{7{,}041}{279{,}000}\right) \times (1.00 - 0.35) = 1.6$$

Accordingly, if the more detailed water sharing rules outlined in the Moreton ROP are taken into account, the allocation to irrigators would be 1.6%.

The Authority noted submissions by stakeholders:

(a) seeking peer review of the HUF methodology (including the application of WASOs) being proposed by Seqwater; and

(b) questioning whether Seqwater has a genuine methodology that identifies costs incurred by irrigators.

In response, the Authority reviewed the results of Seqwater's initial HUF and "adjusted HUF" approaches and concluded that both of these approaches are deficient. The Authority considered that its recommended approach is sound (from theoretical and practical perspectives) and takes into account announced allocation reductions and cut-offs detailed in the ROP.

Submissions Received from Stakeholders on the Draft Report

Seqwater (2013a) agreed with the Authority's proposed approach to adjusting nominal WAE for renewals cost allocation purposes.

In response to the Draft Report, MBRI (2013a and 2013d) submitted:

(a) agreement with the Authority's view that applying the HUF methodology resulted in a perverse outcome (majority of costs being allocated to irrigators) and [like the Authority] proposed that the HUF be abandoned;

(b) that the proposed cost allocation method for Central Brisbane River WSS is too simplistic and not based on irrigation use of the assets. There are no renewal costs that relate to providing a service to irrigators under the Moreton ROP (that is, Somerset Dam and Wivenhoe Dam should not be included in costs for the Central Brisbane River WSS). Somerset Dam should not have been included as it is not part of the Central Brisbane River WSS but is in the Stanley River WSS;

(c) releases can only be made under the Moreton ROP if necessary to meet downstream demand, which if it can be met by natural flows, requires no release. MBRI submitted that the Authority overestimated the extent to which irrigators are provided with releases from the dam. Since the enactment of the Moreton ROP, there has been sufficient natural system flows available for irrigation. MBRI submitted that the proper allocation to irrigators accordingly is zero per cent;

(d) MBRI queried why the costs were only being allocated to irrigators and the Brisbane Zone water supply when there are a number of other urban and industrial users; and

(e) if irrigators did not take water, the savings to Seqwater would be irrelevant, so based on this (and the above), the proper allocation to irrigators is zero.

MBRI raised a number of water planning issues, including their dissatisfaction with the water sharing rules outlined in the ROP. [The Authority has not been directed to review the water planning framework].

During consultations in January (QCA 2013), irrigators in Central Brisbane River stated:

(a) the Authority's cost allocation method overstates the benefits received by irrigators. Irrigators indicated that once the announced allocation drops below a certain level, the available water does not allow for sufficient economies of scale to operate. Bulk fixed costs should be allocated by a weighted average based on the bands of the allocation amounts defined in the ROP. Each successive reduction to the announced allocation needs to be modelled to calculate the appropriate cost allocation factor; and

(b) that HP users have a far greater level of service and should pay proportionally more costs than MP users – irrigators should be allocated 1% of total costs.

Authority's Response to Submissions on the Draft Report

In response to MBRI, the Authority:

(a) does not propose to use the HUF to allocate costs in this scheme;

(b) accepts that the Draft Report recommended approach is simple, however, this reflects a lack of water use data for estimating a more nuanced cost allocation approach.

However, the Authority notes (Volume 1 – Chapter 4: Regulatory Framework) that the Moreton ROP specifies that MP WAE are supplemented by assets including Somerset and Wivenhoe dams.

Specifically, the Moreton ROP describes announced allocations for the Central Brisbane River's MP WAE being conditional on the combined useable volumes of Somerset and Wivenhoe dams. According to the regulatory framework, therefore, a portion of the headworks is required to service irrigators. The Authority's cost allocation methodology reflects a reasonable estimate of irrigator benefit (that is, 1.6% of costs in the Draft Report, where irrigators hold 2.5% of customer WAE);

(c) acknowledges Seqwater irrigators in Central Brisbane River WSS do not order water, which is reflected in the revised sharing of operating costs;

(d) notes Seqwater's NSP specifies the WAE holders in the Central Brisbane River WSS (e.g. Ipswich City Council, Somerset Regional Council, Lowood and District Golf Club), each of which has been effectively allocated costs according to their WAE, ensuring that irrigators do not pay these costs; and

(e) the Authority has considered several alternative cost allocation methods to account for the portion of costs/assets used to service irrigators. The Authority's preferred approach remains that 1.6% of renewals and asset related maintenance costs be allocated to MP (irrigation) WAE. This compares to Seqwater's proposed 2.1% and represents a 24% reduction when compared to Seqwater's approach.

Any issues raised by MBRI about water sharing are best addressed to DNRM as part of future ROP reviews, where appropriate.

In response to comments received at the consultation meeting, the Authority considers that:

(a) MBRI's proposition that irrigators do not benefit once announced allocations fall below 100% is not accepted. Irrigators still receive a water service even when announced allocations are progressively reduced with declining dam levels as shown in Table 4.6. To address the issue of economies of scale, irrigators can either purchase in the temporary trading market (to top up water supplies) or sell (to realise a return). In relation to the suggestion that bulk fixed costs should be allocated according to the announced allocation bands in the ROP, there is insufficient data (that is, water use for each band) to provide a basis to improve upon the Authority's draft 1.6%.

As further validation of the approach adopted, the Authority compared Central Brisbane River WSS to two reliable SunWater schemes: Lower Fitzroy and Pioneer Valley WSSs. By converting cost allocation shares to Water Price Conversion Factors (WPCFs) the Authority noted the following ranges of WPCFs from 2006-11 to HUF equivalents for 2012-17. These are: Lower Fitzroy at 1.1 to 1.5 and Pioneer Valley 1.5 to 2.0.

The Draft Report's recommended cost allocation for Central Brisbane River WSS MP WAE is equivalent to a WPCF of 1.6, which is within the range of these SunWater WSSs. Further, Central Brisbane River WSS is a reliable scheme and irrigators benefit through the operation of the SEQ Water Grid, which draws on other surface and manufactured water sources to meet HP demand; and

(b) HP WAE does receive better reliability and service and should pay proportionally more than irrigators, which is consistent with the Authority's recommended approach of allocating only 1.6% of costs to MP irrigation WAE.

Accordingly, the Authority will maintain its recommended adjusted WAE of 1.6% of renewals (and other) costs to be allocated to MP irrigation WAE in this WSS.

4.6 Calculating the Renewals Annuity and Final Adjustments

Draft Report

In Volume 1, the Authority recommended an indexed rolling annuity, calculated for each year of 2013-17.

Submissions Received from Stakeholders on the Draft Report

Flood Mitigation

MBRI (2013d) submitted that flood mitigation infrastructure is not available to release water to supply allocation holders in the Central Brisbane River WSS and capital expenditure relating to these items should be excluded. MBRI (2013d) considered that irrigators should not pay for renewal of assets related to flood mitigation, hydro-electricity or recreation facilities. MBRI noted that Somerset and Wivenhoe Dams were the only gated dams in SEQ and are the only two dams with a flood mitigation function.

MBRI proposed that all renewals items be listed according to use: flood mitigation, storage, hydro-electricity, recreation and other. If a full analysis is not possible or considered inefficient, MBRI proposed an apportionment based on dam storage capacities provided for flood and water supply. MBRI indicated that water supply consisted of 1,544,800ML in a total of 4,274,800ML or 64%. MBRI indicated that irrigators' share of the total storage was 6771ML of 4,274,800ML or 0.16%.

Revenue Offsets

MBRI proposed an irrigator share of 0.16%, to be adjusted further downwards for recreation management and hydro-electricity shares.

MBRI also suggested that irrigators are penalised by flood management activities, citing the impacts of flood water releases on the mid Brisbane River in 2011. This led to damage of river banks, pumping infrastructure and substantial costs in remedial action. MBRI (2013e) did not accept that the Authority has done sufficient research on these impacts.

Authority's Response to Submissions Received on the Draft Report

Flood Mitigation

The Authority generally accepts the view that flood mitigation related expenditure for designated flood storage and management activities, should not be charged to irrigators. The key reasons for this view are that:

(a) flood mitigation costs should be shared among all beneficiaries in the community. This is most appropriately achieved preferably through a property based charge to all members of the community (e.g. through rates) or through water charges applied on all consumers in an affected area. If included in water charges, irrigators who have

larger volume allocations may be allocated a disproportionate share of flood mitigation costs compared to individual urban customers in a bulk supply system;

(b) the benefits to irrigators are marginal during normal times and most flood events (except in the most extreme flooding scenario where the dam would otherwise fail – in such circumstances a benefit may be established; and

(c) an appropriate allocation of costs can be achieved through retail water charges. While there are some irrigators in the Central Brisbane River WSS that are connected to reticulated domestic water supply systems and already make a contribution for flood mitigation through these charges, some irrigators are not connected.

There is a precedent for separating flood mitigation costs and charging to the general community. In SunWater's Proserpine WSS for example, where Peter Faust Dam has a flood mitigation role, the flood mitigation proportion of costs is allocated to the Council as a separate charge, and effectively passed through to all Council rate-payers, including irrigators, through rate charges.

The Authority does not propose to separately identify renewals items that relate to flood mitigation and the other various functions of the dam. Some assets, such as outlet valves and the dam wall have a shared use – both for flood mitigation and for storage capacity. An appropriate approach would be to determine the asset base and associated costs required to provide the designated safe yield with no flood mitigation compartment. The identification of the correct apportionment is time-consuming and not cost-effective given the amounts allocated to irrigation.

As an alternative, the Authority has calculated the portion of the dam that relates to flood mitigation on the basis of the full supply storage capacity as a proportion of total capacity including the flood compartment. The Authority rejects MBRI's suggested percentage of 0.16% as it compares the volume of irrigation WAE to irrigators with a total capacity measure.

The Authority agreed with the full supply volume of 1,544,800ML cited by MBRI which comprises 1,165,200ML in Wivenhoe Dam and 379,800ML in Somerset Dam.

However, the size of the flood compartment in the two dams is less clear. When originally built, the designated flood compartment sizes were 524,000ML for Somerset Dam and 1,450,000ML for Wivenhoe Dam (Seqwater website).

In the case of Somerset Dam, the flood storage volume of 750,000ML cited by MBRI corresponds to a lake level of 110 metres, as noted in the *Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam*. However, Somerset Dam commences over-topping at 107.45 metres and acts as a broad crested weir. This level corresponds with a flood storage volume of 524,000ML and marks the level at which the dam ceases to serve a flood storage function.

Wivenhoe Dam was modified in 2005 with reconstruction of the wave wall into a water-retaining structure and installation of an auxiliary spillway on the right abutment of the Dam. This spillway included three fuse plugs designed to wash away in sequence when dam levels reach 75.7 metres, 76.2 metres and 76.7 metres respectively. Once the fuse plugs have collapsed, the rate of flow can be managed by closing one or more of the five radial gates on the main spillway.

Under the Manual, a dam safety mode (W4) is triggered when dam levels reach 74 metres (910,000ML of flood capacity) and marks the point at which flood waters are no longer

stored behind the gates but begin to be released. Under the W4 procedure, the priority shifts from managing downstream impacts to protecting the structural integrity and safety of the dam by releasing the flood waters in a controlled fashion to avoid overtopping the main crest at 80 metres. Damage to downstream community infrastructure is likely at the W4 stage.

MBRI's suggested flood storage capacity of 1,980,000ML corresponds to the 80 metre dam wall height. Wivenhoe Dam is overtopped with a 1 in 100,000 Annual Exceedance Probability event and flood mitigation ceases completely at this level.

The Authority considers that, in effect, the flood mitigation function begins to dissipate once the flood storage of 910,000ML is reached and W4 is triggered, and ceases completely once the dam is overtopped with 1,980,000ML of flood storage filled. The mid-point of this range is 1,450,000ML, equivalent to the original designated flood compartment. It is noted that the third fuse plug is designed to collapse when the flood storage is around 1,420,000ML.

On balance, the Authority considers that the flood storage compartment volume that should be used for the purposes of cost allocation is a total of 1,974,000ML (1,450,000ML in Wivenhoe and 524,000ML in Somerset). Total storage including full supply volume is 3,518,800ML. Supply related storage, therefore, accounts for 44% of the total and flood mitigation for 56%.

Therefore, in the absence of a more detailed and complex analysis, the Authority recommends that the renewals costs allocated to irrigators be reduced by 56%. This apportionment is not based on a sophisticated analysis and represents the best approach given the time and information available. It should not be regarded as applicable to non-irrigation sectors. The Authority expects that in subsequent reviews, with better information, a more accurate apportionment may be possible.

Seqwater (2013i) disagreed with any suggestion that flood mitigation costs should be separated out. Seqwater quoted the Authority's *Statement of Regulatory Pricing Principles for the Water Sector* (2000) which stated that in the absence of any specific pricing arrangements relating to flood mitigation works, the Authority would include all water assets in the RAB for pricing purposes. Seqwater also noted that in the GSC review, the Authority did not separate flood mitigation assets.

In response to these comments, the Authority's approach does not imply that the flood mitigation assets are excluded from the asset base. Rather, it relates to an efficient pricing framework to ensure that the appropriate costs are passed through to irrigators in proportion to the level of benefit.

Revenue Offsets

The Authority has offset hydro-electricity costs by providing a revenue offset (refer Chapter 6: Total Costs and Final Prices).

Under the Ministerial Direction, recreation management costs are to be shared among all users including irrigators. This is a matter of Government stated policy. However, revenues from recreational activities are applied as an offset.

The Authority accepts that flood releases will potentially damage river banks and infrastructure under extreme events such as occurred in 2011. The Authority considers that Seqwater should improve its warning systems for flood releases to enable irrigators to minimise infrastructure loss and damage.

Conclusion

For the Central Brisbane River WSS, Seqwater's proposed annuity for 2013-17, and the Authority's draft and final recommended renewals annuities are shown in Table 4.7.

The changes from draft to final recommended renewals annuity for irrigation are due mainly to an adjustment for flood mitigation costs, and a change in the Weighted Average Cost of Capital (WACC) rate from 5.86% to 6.2%, which is used to calculate the annuity (see Volume 1).

Table 4.7: Central Brisbane River WSS Renewals Annuity (Nominal $)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Seqwater (April NSP)	**-**	**1,188,593**	**1,191,679**	**1,292,517**	**1,559,178**
Seqwater (November NSP)	**-**	**1,030,900**	**1,031,781**	**1,107,854**	**1,459,661**
Authority (Draft)					
High Priority	-	1,047,802	1,035,870	1,121,900	1,565,521
Medium Priority	-	17,037	16,843	18,242	25,456
Authority Total	**-**	**1,064,840**	**1,052,713**	**1,140,142**	**1,590,977**
Irrigation Only		**17,037**	**16,843**	**18,242**	**25,456**
Authority (Final)					
High Priority	-	1,044,361	1,033,749	1,181,656	1,552,426
Medium Priority	-	7,404	7,329	7,931	11,007
Authority Total	**-**	**1,051,766**	**1,041,078**	**1,126,587**	**1,563,433**
Irrigation Only		**7,404**	**7,329**	**7,931**	**11,007**

Source: Seqwater (2012c), Seqwater(2012al) QCA (2012) and QCA (2013). Note: Includes some variations to the Draft Report as a result of further quality assurance.

5. OPERATING COSTS

5.1 Background

Ministerial Direction

The Ministerial Direction requires the Authority to recommend a revenue stream that allows Seqwater to recover efficient operational, maintenance and administrative (that is, indirect and overhead) costs to ensure the continuing delivery of water services.

Issues

To determine Seqwater's allowable operating costs for 2013-17, the Authority considered:

(a) Seqwater's direct operating expenditure forecasting methodology;

(b) the prudency and efficiency of Seqwater's proposed direct and non-direct operating expenditures;

(c) appropriate allocation of non-direct operating costs to irrigation tariff groups;

(d) the appropriate method/s of allocating total (direct and non-direct) operating costs between different priority WAEs;

(e) the most suitable cost escalation rates; and

(f) opportunities to improve Seqwater's budgeting and consultation with irrigators in relation to operating expenditure.

5.2 Historical Operating Costs

Previous Review 2006-11

The 2006-11 price paths were recommended by SunWater after consultation with irrigators during 2005-06. The Queensland Government subsequently approved those prices. The price paths however, did not apply to the Central Brisbane River WSS.

Draft Report

Stakeholder Submissions

Seqwater

Seqwater (2012aj) submitted that, as it has not previously assigned components of operating expenditure (in particular non-direct costs) to irrigation schemes, it has not been possible for it to make a comparison between total forecast and historical operating expenditures.

5.3 Forecast Total Operating Costs

Operating Cost Characteristics

Operating activities

Seqwater (2012aj) advised that its operating activities include:

(a) scheduling and releasing bulk water from storages, surveillance of water levels and flow rates in water courses and quarterly meter reading;

(b) customer service and account management;

(c) operating and maintaining recreational facilities; and

(d) complying with:

  (i) requirements set out in the relevant IROLs, ROLs and ROPs;

  (ii) dam safety obligations including under the *Water Act 2000*;

  (iii) the *Environmental Protection Act 1994*; and

  (iv) land management, workplace health and safety and other reporting obligations.

Operating cost classifications

Seqwater defines its operating costs as either direct or non-direct. Direct costs are those directly attributed to particular irrigation schemes. Non-direct costs are those common to all schemes, and therefore need to be allocated to tariff groups using an appropriate cost allocator.

Direct Operating Costs

Direct costs are those costs that have been budgeted at the individual asset level in the scheme and include:

(a) operations relating to the day-to-day costs of delivering water and meeting compliance obligations. Operations activities include:

  (i) dam operations, which relate to managing dams and weirs. It is the largest direct cost category and activities include providing information and services to customers, monitoring water flows, meeting regulatory requirements for compliance, safety, and flood management, and developing system operating plans for infrastructure; and

  (ii) group support and catchment management, which include delivering catchment maintenance services (including recreation areas) for operational assets. Activities include implementation of asset management plans and meeting compliance obligations (recreation services, public safety, catchment conservation);

(b) repairs and maintenance, which relate to maintaining assets that support irrigation water supply including:

  (i) scheduled maintenance generated by the corporate information system (CIS);

  (i) planned maintenance, which comprises scheduled inspections and strategic maintenance; and

  (ii) reactive maintenance, which results from unplanned breakdowns.

Seqwater has set a target ratio of 71:29 planned to unplanned maintenance in 2012-13, and this ratio has been applied for the forecast period. In this context, 'planned' includes scheduled and planned maintenance activities.

Contractors deliver most maintenance activities. Contractors are generally selected from Seqwater's panel of providers and supervised by Seqwater staff. Seqwater currently employs 49 full-time contractors plus ad-hoc contractors depending on workload; and

(c) other (direct) costs including:

(i) local government rates payable on Seqwater's land including storages; and

(ii) detailed dam safety inspections conducted every five years, in addition to the costs of routine (annual) dam safety inspections (included in operations expenditure).

Seqwater also disaggregates its direct operations costs into the following cost types: labour, contractors and materials, and other:

(a) labour costs are the direct labour costs arising from budgeted operations activities for 2012-13 (base year). Total irrigation direct labour (for Seqwater employees) has been submitted under the category 'direct operations costs'; however, in practice a small proportion of this 'operations' labour will be used for maintenance activities[4];

(b) contractors and materials costs are based on the quantities required in the work instructions for 2012-13; and

(c) other direct operations costs include plant and fleet hire, water quality monitoring and fixed energy costs.

Non-Direct Operating Costs

Non-direct costs are classified by type of expenditure:

(a) water delivery costs of dam operations, infrastructure maintenance, environmental management and recreation and catchment maintenance services;

(b) asset delivery costs of project planning and managing the delivery of projects;

(c) corporate costs of business services, organisational development and the office of the CEO; including the costs of IT services, finance, procurement, legal and risk, governance and compliance activities; and

(d) other costs mainly associated with the Creek Street facilities and flood control centres.

Seqwater categorises its other non-direct operating costs as follows:

(a) non-infrastructure costs of assets such as buildings, plant and equipment. Seqwater uses aggregate depreciation costs as a proxy for the costs associated with the use of these assets;

[4] Repairs and maintenance are budgeted as a separate line item, and exclude labour. Seqwater has minimised the manipulation of data from its financial system when presenting forecast costs. While there are shortcomings to this approach, Seqwater does not believe there is a material impact on prices, given the overall proportion of labour costs that relate to repairs and maintenance is small (on average, 3% across all schemes).

(b) insurance premium costs including industrial special risks, machinery breakdown, public liability, professional indemnity, contract works and directors and officers insurance; and

(c) a working capital allowance to provide for the economic cost arising from the timing difference between accounts receivable and accounts payable.

Forecast Operating Costs

Draft Report

Stakeholder Submissions

Seqwater

Seqwater (2012al) submitted forecast total operating costs by activity in Central Brisbane River WSS (all sectors).

Seqwater (2012aj) submitted that it has adopted an approach to forecasting whereby operating expenditure for schemes 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 GSCs submission to the QCA. Seqwater has 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. In addition, Seqwater noted that the 2012-13 operating expenditure forecasts provided in the GSCs submission have been reviewed by the QCA for prudency and efficiency.

Seqwater applied the following escalators to 2012-13 operating costs to derive forecasts for the regulatory period:

(a) direct labour, materials and contractors' costs and repairs and maintenance were escalated at 4% per annum over the regulatory period; and

(b) 'other' direct costs and all non-direct costs were escalated at forecast CPI (2.5% per annum).

Seqwater provided two versions of its Central Brisbane River WSS NSP that described both direct and non-direct budgeted operating costs for 2012-13. Specifically, Seqwater provided:

(a) an original version in April 2012 (Seqwater 2012c); and

(b) a version in November 2012 (Seqwater 2012al) with revised operating costs compiled in response to the Authority's review of GSC, the Minister's subsequent decision regarding these charges and further analysis by Seqwater of bulk water costs.

Total operating costs outlined in the two NSPs have been compared (Table 5.1 refers).

This comparison shows that the total costs for the scheme are about 4.6% lower than originally proposed.

Table 5.1: Seqwater's Forecast Operating Costs for the 2012-13 Base Year (Nominal $)

	April NSP	*November NSP*	*Variance*
Direct Operating Costs			
Operations			
Labour	3,022,176	2,967,000	(55,176)
Contractors	751,000	726,000	(25,000)
Materials	381,012	400,498	19,486
Electricity	262,500	271,426	8,926
Other	842,247	834,867	(7,380)
Sub-Total	**5,258,936**	**5,199,791**	**(59,145)**
Repairs and Maintenance			
Planned	1,361,678	1,516,082	154,404
Unplanned	556,178	619,245	63,067
Sub-Total	**1,917,856**	**2,135,327**	**217,471**
Dam Safety	0	0	0
Rates	689,204	689,204	-0
Total Direct Operating Costs	**7,865,996**	**8,024,322**	**158,325**
Non Direct Operating Costs			
Operations			
Water Delivery	768,718	754,809	(13,910)
Asset Delivery	343,191	371,802	28,611
Corporate	2,746,483	2,330,751	(415,732)
Other	2,865,097	2,444,654	(420,444)
Sub-Total	**6,723,490**	**5,902,015**	**(821,475)**
Non-Infrastructure Asset	341,969	361,404	19,435
Insurance	781,253	691,425	(89,828)
Working Capital	128,926	128,926	0
Total Non-Direct Operating Costs	**7,975,638**	**7,083,770**	**(891,868)**
Total Operating Costs	**15,841,634**	**15,108,092**	**(733,542)**

Source: Seqwater (2012c) and Seqwater (2012al).

Details submitted by Seqwater of the direct and non-direct operating expenditure forecasts for the Central Brisbane River WSS by activity are provided in Table 5.2, based on the November NSP (Seqwater 2012al).

Table 5.2: Seqwater's Operating Expenditure by Activity (Nominal $'000)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Direct					
Operations	5,199.8	5,391.2	5,589.8	5,796.0	6,010.0
Repairs and Maintenance	2,135.3	2,220.7	2,309.6	2,402.0	2,498.0
Dam safety	0	0	0	53.8	0
Rates	689.2	706.4	724.1	742.2	760.8
Non-Direct					
Operations	5,902.0	6,049.6	6,200.8	6,355.8	6,514.7
Non-Infrastructure	361.4	370.4	379.7	389.2	398.9
Insurance	691.4	708.7	726.4	744.6	763.2
Working Capital	128.9	132.1	135.5	138.8	142.3
Total	**15,108.1**	**15,579.2**	**16,065.9**	**16,622.4**	**17,087.9**

Source: Seqwater (2012aj) and Seqwater (2012al).

The total operating costs by type are detailed in Table 5.3 for the Central Brisbane River WSS.

Table 5.3: Seqwater's Operating Costs by Type (Nominal $'000)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Labour	2,967.0	3,085.7	3,209.1	3,337.5	3,471.0
Contractors and Materials	1,126.5	1,171.6	1,218.4	1,267.2	1,317.8
Electricity	271.4	278.2	285.2	292.3	299.6
Others	834.9	855.7	877.1	899.1	921.5
Planned Repairs and Maintenance	1,516.1	1,576.7	1,639.8	1,705.4	1,773.6
Unplanned Repairs and Maintenance	619.2	644.0	669.8	696.6	724.4
Dam Safety	0	0	0	53.8	0
Rates	689.2	706.4	724.1	742.2	760.8
Non-Direct	7,083.8	7,260.9	7,442.4	7,628.4	7,819.2
Total	**15,108.1**	**15,579.2**	**16,065.9**	**16,622.4**	**17,087.9**

Source: Seqwater (2012aj) and Seqwater (2012al).

Other Stakeholders

Other stakeholders submitted as follows:

(a) irrigators provide benefit to riparian areas through spraying noxious weeds, cleaning river banks and general maintenance of waterways. This improves and maintains the quality of water and therefore reduces Seqwater's costs (B.M. Bernitt 2012 and C.D. Summerville 2012, J. Harris 2012, GRASSCO 2012);

(b) Seqwater cannot identify any costs of any service that they supply to irrigators, and irrigators have no need for the infrastructure or higher water quality. Seqwater cannot measure irrigation use as it is lost in environmental flow estimations (S. & H. Sinclair 2012b, J.B. and B.L. Keller, GRASSCO, RFPL and MBRII, 2012);

(c) costs attributed to irrigators should be limited to the provision, maintenance and monitoring of water meters and minimal bookkeeping costs associated with the rendering of accounts. Irrigators can save Seqwater money by reading meters themselves and reporting the volume taken each quarter (J.B. & B.L. Keller 2012a, S & H. Sinclair 2012b, RPL 2012a). Meters that conform to proposed new national standards are not warranted due to the cost difference involved (LDGCI 2012); and

(d) Seqwater has provided insufficient data on water use and costs for the Authority to conduct adequate analysis, and a benchmarking analysis against other rural schemes should be carried out (J.B. and B.L. Keller 2012).

Stakeholders had a number of specific comments on operating costs which are detailed in the following sections.

Authority's Analysis

In Volume 1, the Authority concluded that given the changes that have occurred in recent years, it is reasonable for Seqwater to adopt zero-based budgeting for 2012-13 as the base year for 2013-17 forecast costs.

The Authority recommended that Seqwater upgrade its policies, procedures, and information systems for the budgeting, incurrence and management of operating costs in its irrigation sector. In particular, the gathering, recording, documentation and analysis of operating cost information relevant to Seqwater's irrigation sector needs to be improved.

The Authority also recommended that Seqwater improve its consultation and communication processes with irrigation customers in relation to the forecasting and incurrence of operating costs.

The key issue in reviewing irrigator's costs in the Central Brisbane River WSS is the method of cost allocation between irrigation and other sectors. Given the dominance of the non-irrigation sector, the cost sharing is very sensitive to changes in cost allocation methods. This is further reviewed below.

In response to concerns raised by other irrigators, the Authority:

(a) recognised the contribution of irrigators in reducing the operating costs that would otherwise be incurred in operating and maintaining irrigation schemes, particularly in regard to stream bank management. However, such activities are generally performed by irrigators as part of their on-farm management in any case, and it is not feasible to quantify this as a cost offset;

(b) did not agree that the infrastructure provided by Seqwater is of no benefit to irrigators. As noted previously, the Moreton ROP describes announced allocations for the Central Brisbane River irrigation (that is, MP WAE) being conditional on the combined useable volumes of Somerset and Wivenhoe dams. This provision confirms that the headworks of Somerset and Wivenhoe dams are required in supplementing water for the purpose of irrigation;

(c) noted that the cost to irrigators is related to the priority of supply which in some cases results in a relatively small share of the total costs involved;

(d) noted that Seqwater is required by regulation to carry out meter reading. Moreover, the costs associated with any proposed national metering standard is excluded from this review by the Ministerial Direction; and

(e) recognised that a number of data issues have arisen during the investigation. The Authority notes that while separate irrigation cost data are not easily available for the 2006-11 period (the equivalent of the previous price path), irrigators have not been charged for their use of water in this period. The Authority proceeded on the basis of readily available information and water use assumptions as detailed further below.

The Authority agreed that a more effective consultation process between Seqwater and irrigators should be established, and has recommended accordingly.

Final Report

No submissions were received in regard to forecast operating costs. Issues related to cost allocation are addressed further below.

5.4 Prudency and Efficiency of Direct Operating Costs

Introduction

Seqwater forecast its direct operating costs for the 2013-17 regulatory period by extrapolating 2012-13 (base year) budgeted expenditure across the 2013-17 regulatory period.

Accordingly, the Authority focused its review on 2012-13 budgeted operating expenditure and the method of extrapolation.

Draft Report

For the purposes of the analysis of the prudency and efficiency of operating costs, the Authority reviewed Seqwater's submitted NSP data.

Stakeholder Submissions

Seqwater

Seqwater's submission provided details of the key cost components in direct operating costs.

Operations relates to the day-to-day costs of delivering water and meeting compliance obligations. The primary activities relate to dam operations and group support.

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

Dam operations are relatively labour intensive and expenditure is driven by:

(a) providing efficient service to irrigation customers in terms of information and management and delivery of service;

(b) developing robust and acceptable systems to monitor water flows to manage water sources, floods and regulations;

(c) developing an effective and technically capable and resilient flood operations centre utilising systems of quality standards;

(d) improving data management to ensure compliance on a wide variety of water management areas;

(e) ensuring security and safety at our water sources is meeting regulatory and community standards; and

(f) developing system operating plans to ensure the efficiency and operation of dams, weirs, bores and other water sources.

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

Seqwater has responsibility for the ongoing management and maintenance of recreation sites transferred from SunWater. The use of Seqwater assets for recreational purposes is

secondary to Seqwater's main function of water supply and treatment. However, 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.

The costs associated with catchment management activities (for water quality outcomes) are excluded from the lower bound cost base for irrigation.

Seqwater presented direct operations costs for the above activities in terms of the type of cost (that is, labour; contractors and materials and "other"). Specifically:

(a) labour costs are derived on the basis of budgeted work in the scheme for 2012-13 and the related salary costs for routine activities. The costs represent all costs budgeted as employee costs for the scheme. In practice, a small proportion of this labour will be used for maintenance activities. Consistent with the current Enterprise Bargaining Agreement for Seqwater and the recommendation of the Authority in its draft SunWater report, Seqwater has escalated internal labour costs at 4% per annum for the regulatory period 2013-14 to 2016-17;

(b) contractor and materials costs for 2012-13 are based on the quantities required in the work instructions for the scheme. As per the Authority draft SunWater report, contractor and material costs have been escalated at 4% per annum for the regulatory period; and

(c) "other" direct operating costs incorporate a range of expenses including plant and fleet hire, water quality monitoring expenses and fixed energy costs. These costs have been escalated at forecast CPI for the regulatory period.

Seqwater submitted that repairs and maintenance is performed at the scheme in accordance with Seqwater's maintenance system. This system identifies the maintenance requirements for each asset, and then sets out a schedule for maintenance over the year(s) for that asset. In addition, maintenance requirements are developed through Facilities Asset Management Plans (FAMPs) and as a result of scheduled inspections.

There is also unplanned maintenance which is required in response to asset breakdown or failure, or where new information emerges about asset condition (e.g. via regular inspections). Expenditure on unplanned maintenance for 2012-13 is derived based on past experience.

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

Repairs and maintenance for 2012-13 has been escalated at 4% per annum over the regulatory period.

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.

In addition, more thorough periodic dam safety inspections are carried out on a five- yearly basis. Costs associated with these inspections have been added to forecast direct operating expenditure in the year in which the expenditure is expected to be incurred. Seqwater allowed for inspection of Wivenhoe and Somerset Dams in 2015-16.

Seqwater incurs rates in relation to its land portfolio, including storages. Seqwater has forecast rates expenses for the Central Brisbane River WSS based on 2011-12 actual rates, and has forecast these to increase annually by CPI for the regulatory period.

Seqwater's proposed direct operating costs by activity as submitted in the November 2012 NSPs are provided in Table 5.4.

Table 5.4: Seqwater Direct Operating Costs by Activity (Nominal $'000)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations	5,199.8	5,391.2	5,589.8	5,796.0	6010.0
Repairs and Maintenance	2,135.3	2,220.7	2,309.6	2,402.0	2,498.0
Dam Safety	0	0	0	53.8	0
Rates	689.2	706.4	724.1	742.2	760.8
Total	**8,024.3**	**8,318.4**	**8,623.5**	**8,994.0**	**9,268.7**

Source: Seqwater (2012j) and Seqwater (2012al).

Forecast, direct operating costs by type are outlined in Table 5.5.

Table 5.5: Seqwater Direct Operating Costs by Type (Nominal $'000)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Labour	2,967.0	3,085.7	3,209.1	3,337.5	3,471.0
Contractors and Materials	1,126.5	1,171.6	1,218.4	1,267.2	1,317.8
Electricity	271.4	278.2	285.2	292.3	299.6
Other	834.9	855.7	877.1	899.1	921.5
Planned Repairs and Maintenance	1,516.1	1,576.7	1,639.8	1,705.4	1,773.6
Unplanned Repairs and Maintenance	619.2	644.0	669.8	696.6	724.4
Dam Safety	0	0	0	53.8	0
Rates	689.2	706.4	724.1	742.2	760.8
Total	**8,024.3**	**8,318.4**	**8,623.5**	**8,994.0**	**9,268.7**

Source: Seqwater (2012aj) and (2012al).

Other Stakeholders

QFF (2012) submitted that operations costs for materials and other operating costs are high and must be reviewed [MBRI (2012) submitted that maintenance of redundant equipment and pumping into off-stream storages should not be admitted as eligible costs]. Additionally, QFF (2012) queried the very high costs of dam operations allocated to Central Brisbane.

During consultation in June 2012 (QCA 2012c) irrigators advised that as irrigators generally do not order water, this may reduce operating costs incurred by Seqwater.

Stakeholders (RFPL 2012, MBRI 2012 and S. and H. Sinclair 2012b) submitted that Seqwater cannot identify any costs of any service that it supplies to irrigators, and that irrigators have no need for the infrastructure or higher water quality. Additionally, irrigators assist in improving and maintaining the quality of water and therefore reduce Seqwater's costs[5].

Stakeholders (S. and H. Sinclair 2012b and RPL 2012) also submitted that costs attributed to irrigators should only be limited to provision, maintenance and monitoring of water meters and minimal bookkeeping costs associated with the rendering of accounts.

B.M. Bernitt and C.D. Summerville (2012), J. Harris (2012) and GRASSCO (2012) submitted that irrigators incur costs in undertaking activities that provide benefit to riparian areas, such as spraying noxious weeds, cleaning river banks and general maintenance of waterways.

Authority's Analysis

The Authority engaged SKM to review the prudency and efficiency of Seqwater's proposed direct operating expenditure for this scheme. Operations materials costs were selected for review based on QFF concerns [no redundant equipment was identified and pumping costs into off-stream storages is not relevant to this scheme].

The Authority's responses to other stakeholder submissions were as follows:

(a) in response to the view that as irrigators do not need to order water in the scheme operating costs should be lower, operating costs already take into account the absence of such services;

(b) in regard to comments that irrigators do not benefit from the infrastructure, the Moreton ROP indicates that irrigators (and all users) benefit from the improved reliability offered by infrastructure and should contribute to an appropriate share of costs. Catchment management and water quality activities specific to urban users have been excluded from irrigation costs; and

(c) consistent with (b), costs should not be limited to metering and minimal bookkeeping costs. The allocation of operating costs between different priority holders is a relevant issue and is reviewed below.

In response to stakeholders who have submitted that irrigators provide benefit to riparian areas, the Authority acknowledged that irrigators can assist with stream-bank management and maintenance of water-ways. Such management is in the best interests of irrigators themselves and is normal practice in comparable schemes around the State. While there is

[5] MBRI 2012 also noted irrigators receive no compensation where flood releases damage irrigators' equipment or where releases affect the Lowood/Fernvale area such as in 2010 and 2011. Issues of compensation for specific events are matters for Government.

no specific operating cost offset proposed for this contribution, it was noted that irrigators are not required to meet full recovery of a share of capital costs - that is, irrigation prices are targeted to lower bound levels.

SKM reviewed a sample of items, taking account of comments received from stakeholders in regard to specific costs. SKM also reviewed the relevance of certain costs to irrigators and made adjustments SKM considered appropriate.

Item 1: Operations – Materials and Other Costs

Stakeholder Submissions

Seqwater

Seqwater's original NSP estimated a cost of $1.529 million for materials and other costs in 2013-14. This estimate was the basis for SKM's review.

Seqwater's final November 2012 estimate was slightly lower at $1.507 million.

Contractor costs for 2012-13 were estimated at $751,000 in April 2012, revised to $726,000 in November 2012.

The total cost for 'materials and contractors and other' was $2.31 million.

Other Stakeholders

QFF (2012) submitted that materials and other costs in the Central Brisbane River WSS are high and should be reviewed by the Authority.

Consultant's Review

SKM noted that the costs provided in the Authority's Terms of Reference are drawn from Seqwater's original NSP but are not consistent with the values in the NSP. This is because NSP listed costs for activities classed as 'other' only whereas the Authority included costs for materials associated with the Central Brisbane River WSS. As such Seqwater advised that expenditure items stated in the Authority's Terms of Reference cannot be directly related back to Seqwater's NSP submission making direct comparison difficult. SKM endeavoured to reconcile these differences as discussed below.

The alternative estimates considered initially by SKM are detailed in Table 5.6.

Table 5.6: Materials and Other Costs – Central Brisbane River WSS, Cost Estimates (Nominal $'000)

Source	*Actual Costs 2011-12*	*Forecast Costs 2012-13*	*Forecast Costs 2013-14*
Terms of reference drawn from Seqwater's original NSP		1,486.0	1,529.0
'Other' costs component only – November NSP		1,104.7	1,132.4
Opex – Irrigation Updated YTD 'Materials and Contractors' only		1,137.2	
Opex – Irrigation Updated YTD 'Materials and Contractors' plus 'Other'	1,693.4	2,387.1	

Source: SKM (2012). Note: *NSP value does not include costs of materials, only 'other' whereas the QCA Terms of Reference value includes expenditure on materials as well as 'other'*

In the document 'Opex – Irrigation Updated YTD', there are two potential methods for determining the total costs listed including either considering the costs listed under the heading 'Materials and Contractors', or consolidating both the costs listed under the 'Materials and Contractors' and 'Other'. Neither method produced costs consistent with those listed in the terms of reference. Further, year-to-date costs for 2011-12 at 30 June 2012 were listed in 'Opex – Irrigation Updated' at $583,819, compared to a budget of $1,137,195.

SKM noted there is inconsistency between costs listed in the documents provided - that is, the terms of reference, the revised opex summary and 'Opex - Irrigation Updated YTD'

Item description

Materials and other expenses are required for dam operations, recreational water treatment plant operation, group support and catchment services (including water quality monitoring). Definitions for these activities relevant to irrigation operation and maintenance are:

(a) Dam Operations: 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, maintaining releases from dams to meet demand, meeting ROP compliance, delivering water to irrigation customers, and ensuring water related data is recorded and stored;

(b) Recreational water treatment plant operations: With respect to irrigation services specifically, limited to managing the recreation water treatment plants which service visitors to the recreation sites located at the dams or water storages; and

(c) Group Support and Catchment Services: Group Support ensures that asset management plans, processes, systems and practices are implemented in accordance with relevant regulatory requirements including environmental protection laws and land ownership laws. This team also contributes to the effective development, implementation and management of the reporting systems within Seqwater's Water Delivery Group, as well as the management of third party access and event approval at Seqwater sites and locations.

(d) Water quality monitoring: The central role of the Water Quality team is to manage Seqwater's risk in relation to water quality. The core functions and activities of the Water Quality Team are Catchment and Water Treatment Plant monitoring, Laboratory and data management services and Drinking Water Quality Management.

Provided documentation

The documents used for this review are:

(a) Information Request Response, RFI013,Materials and Other Central Brisbane River WSS, Seqwater, 14/08/2012;

(b) Operational Cost Report for 2012-13, Seqwater;

(c) Opex – Irrigation Updated YTD.xls, Seqwater;

(d) Opex – Irrigation Queries;

(e) Seqwater Irrigation Opex Methodology – Brief, Seqwater, 04/09/2012; and

(f) Opex summary (461146_1).xlsx, Seqwater, 04/09/2012.

Initial information provided by Seqwater outlined costs associated with materials and other, and the method for budget calculation. Discussions with Seqwater staff during project interviews provided further information, and resulted in identification of a number of additional information sources that were subsequently requested.

Additional information requested from Seqwater for this review included:

(a) Breakdown of water quality monitoring costs, including a breakdown of contractor sampling charges and monitoring program;

(b) DERM water quality sampling and reporting guidelines ;

(c) Business Case for returning water quality sampling in-house;

(d) HACCP Plan for a recreational water treatment plant; and

(e) Method for calculating the fleet allocation budget.

All requested information was provided by Seqwater and utilised in this review.

Prudency

The materials and supplies required to operate the Central Brisbane River WSS predominantly relate to the operation of assets such as Somerset and Wivenhoe Dams (including the catchment and the recreation areas associated with the dams) and the Wivenhoe recreation water treatment plant.

Seqwater is subject to numerous regulatory obligations, including under legislation and the relevant ROP. Both Wivenhoe and Somerset Dams are referable dams under the *Water Supply (Safety and Reliability) Act 2008*. The precise regulatory obligations providing a requirement for labour resources vary according to the operational team in question. Compliance requirements driving expenditure on materials and other include:

(a) Dam Operations: Market Rules requirements, water ownership and water use legislation, water information reporting requirements, dam safety and reliability legislation;

(b) Catchment Services: environmental protection legislation, recreation responsibilities, catchment management responsibilities, land ownership legislation;

(c) Water Treatment Operations: Market Rules requirements, recreation responsibilities. Materials and consumables are required to operate the dams; and

(d) Water Quality – WQ Monitoring Expenses: Under certain ROPs, ROLs and IROLs subordinate to the Water Act, Seqwater is required to monitor water quality in storages, releases and recreational areas. At recreation sites Seqwater incurs expenses for fulfilling water quality monitoring requirements. At the Wivenhoe recreational water treatment plant water quality monitoring requirements are defined in the Hazard Analysis and Critical Control Point (HACCP) Plan for the plant. The HACCP plan is subordinate to the Drinking Water Quality Management Plan which is a requirement under the *Water Supply (Safety and Reliability) Act 2008*.

SKM noted that following a risk assessment, Seqwater has determined that all water that it provides for human consumption should be of potable water standards. SKM considered that Seqwater's policy in this area is reasonable taking into account the impact on reputation arising from not adopting this policy.

Consequently the operating expenditure item was assessed as prudent.

Efficiency

SKM sought additional details of the breakdown of costs, as summarised in Table 5.7.

Table 5.7: Materials and Other Costs - Breakdown

Expense	*Breakdown*	*2012-13 forecast costs*	*2013-14 forecast costs*
Dam Operations – Materials & Consumables – Somerset Dam	Minor equipment and consumables	$15,000	$15,600
	Clean up and housekeeping - Somerset Hydro	$10,000	$10,400
Dam Operations – Materials & Consumables – Wivenhoe Dam	Safety Surveillance - minor materials	$10,000	$10,400
	Dam Safety - equipment	$2,000	$2,080
	Minor equipment and consumables for emergent works and operational repairs	$30,000	$31,200
	Fish Mngt project mgr	$10,000	$10,400
	Provision for minor expenses	$10,000	$10,400
	ROP Compliance - Admin & support	$1,000	$1,040
	Irrigation Admin & Support	$50,000	$52,000
	Monitoring equipment for water quality and meters	$35,000	$36,400

Expense	*Breakdown*	*2012-13 forecast costs*	*2013-14 forecast costs*
	ROP compliance - Nerang ROP	$100	$104
	Stanwell hydro contract billing	$2,000	$2,080
	Licenses for software	$50,000	$52,000
Dam Operations – Equipment Hire – Wivenhoe Dam	Hire of equipment for operational work	$15,000	$15,600
Dam Operations – Energy Fixed – Somerset Dam	Nil	$20,000	$20,500
Dam Operations – Energy Fixed – Wivenhoe Dam	Nil	$230,000	$235,750
Dam Operations – Plant & Fleet Hire Internal – Somerset Dam		$29,741	$30,931
Dam Operations – Plant & Fleet Hire Internal – Wivenhoe Dam		$49,980	$51,979
Dam Operations – WQ Monitoring Expenses – Wivenhoe Dam	Water samples	$38,000	$39,520
	Routine testing	$3,000	$3,120
	Unscheduled testing	$200	$208
Dam Operations – Property Management – Wivenhoe Dam	Security	$10,000	$10,400
	Security during flood releases to manage visitors and traffic control	$65,000	$67,600
	Security during flood releases to manage visitors and traffic control	$50,000	$52,000
Dam Operations – Portable Equipment – Wivenhoe Dam	Minor maintenance	$20,000	$20,800
Group Support – Materials & Consumables – Somerset Dam	Rec Maintenance	$20,000	$20,800
	Ground Maintenance	$10,000	$10,400
Group Support – Materials & Consumables – Wivenhoe Dam	Minor material and consumables for repairs and maintenance	$30,000	$31,200
	Consumables and materials for onsite workshop	$10,000	$10,400
Group Support – Energy Fixed – Wivenhoe Dam	Energy costs for rec grounds	$10,000	$10,250
Group Support – Property Management – Somerset Dam	Recreation Maintenance - Security Patrols	$20,000	$20,800
Group Support – Property Management – Wivenhoe Dam	Security	$30,000	$31,200
Group Support – Cleaning –	Cleaning	$10,000	$10,400

Expense	*Breakdown*	*2012-13 forecast costs*	*2013-14 forecast costs*
Wivenhoe Dam			
Group Support – Other Chemicals – Somerset Dam	Weed control chemicals	$20,000	$20,800
Group Support – Plant & Fleet Hire Internal – Somerset Dam		$105,887	$110,122
Group Support – Plant & Fleet Hire Internal – Wivenhoe Dam		$128,132	$133,257
Water Quality – WQ Monitoring Expenses – Somerset Dam	Water samples	$18,680	$19,427
	Routine Testing	$52,000	$54,080
	Unscheduled testing	$6,240	$6,490
	Event Testing	$14,560	$15,142
Water Quality – WQ Monitoring Expenses – Wivenhoe Dam	Water samples	$17,060	$17,742
	Routine testing	$56,368	$58,623
	Unscheduled testing	$2,080	$2,163
	Event Testing	$14,560	$15,142
Water Quality – WQ Monitoring Expenses – Wivenhoe Rec WTP	Routine testing	$46,500	$48,360
	Unscheduled Testing	$3,500	$3,640
	Events testing	$4,000	$4,160
Infrastructure Maintenance – Materials & Consumables – Somerset Dam	Somerset Dam Scheduled Maintenance	$13,443	$13,981
	Somerset Dam Reactive Maintenance	$7,716	$8,025
	Somerset Dam Planned Maintenance	$7,361	$7,655
Infrastructure Maintenance – Materials & Consumables – Wivenhoe Dam	Wivenhoe Dam Scheduled Maintenance	$15,051	$15,653
	Wivenhoe Dam Reactive Maintenance	$641	$667
	Raw WPS Esk Reactive Maintenance	$50	$52
	Wivenhoe Dam Planned Maintenance	$718	$747
	Total		**1,438,891**

Source: SKM (2012).

The breakdown of costs provided in response to SKM's request for further information (RFI013) total to $1,438,891 for 2013-14, which is approximately 6.3% less than the $1,529,000 listed in the terms of reference. However, the difference between the two is acknowledged by Seqwater as being due to the exclusion of items that did not exceed $10,000 at any given asset location on the grounds of fast-tracking the information request and also for the purposes of materiality.

Given that costs in excess of $10,000 and in some cases below $10,000 have been explained, and that the costs detailed account for approximately 93.7% of the budget for materials and other, SKM considered that the breakdown of costs included in the terms of reference are appropriate.

The breakdown of costs included in Seqwater's response to SKM's request for information (RFI013) included a number of costs that SKM did not consider as belonging within the materials and other category. These costs are for infrastructure maintenance and security contractors, as shown in Table 5.8.

SKM therefore considered these costs to be not applicable to materials and other, and removed them from the materials and other budget for the Central Brisbane River WSS. These exclusions totalled $228,790 for 2013-14.

Table 5.8: Costs Considered by SKM to not be Applicable

Expense	*Description*	*Further detail supplied by Seqwater*	*2012-13*	*2013-14*
Dam Operations – Property Management – Wivenhoe Dam	Security	During flood releases security is required for managing public safety including traffic control, site security, fish management, etc. Expected to decrease as years go by	$10,000	$10,400
	Security during flood releases to manage visitors and traffic control		$65,000	$67,600
	Security during flood releases to manage visitors and traffic control		$50,000	$52,000
Group Support – Property Management – Wivenhoe Dam	Security	Somerset and Wivenhoe recreation areas are gated for security and public safety. Security providers are contracted to patrol the areas and open and-or close the gates at each site.	$30,000	$31,200
Property Management – Somerset Dam	Recreation Maintenance - Security Patrols	The budgets were based on 2011-12 actuals and YTD trend for the 2011-12 year.	$20,000	$20,800
Infrastructure Maintenance – Materials & Consumables – Somerset Dam	Somerset Dam Scheduled Maintenance	Budget based on past 3 years expenditure	$13,443	$13,981
	Somerset Dam Reactive Maintenance	Based on prior year actual expenditure	$7,716	$8,025
	Somerset Dam Planned Maintenance	Based on prior year actual expenditure	$7,361	$7,655
Infrastructure Maintenance – Materials & Consumables – Wivenhoe Dam	Wivenhoe Dam Scheduled Maintenance	Based on past 3 years expenditure	$15,051	$15,653
	Wivenhoe Dam Reactive Maintenance	Based on prior year actual expenditure	$641	$667
	Raw WPS Esk Reactive Maintenance		$50	$52
	Wivenhoe Dam Planned Maintenance	Based on prior year actual expenditure	$718	$747
	Total			**$228,780**

Source: SKM (2012).

Dam Operations

The expenditure for dam operations consists of equipment and consumables utilised in emergency dam safety works and operational repairs, energy costs, and plant and fleet costs associated with dam operations.

Materials and consumables are purchased as needed for operational repairs and emergency works, while some equipment is hired. The budget for materials and consumables purchase and equipment hire has been calculated by escalating historical expenditure at 4%.

Electricity is supplied externally. The budget for 2013-14 was determined by escalating the 2010-11 historical spend. During the 2012-13 GSCs review SKM assessed electricity costs as prudent and efficient. Providing that the method of obtaining electricity has not changed since the 2012-13 GSCs review, SKM considered electricity costs efficient. It is noted that the electricity prices may be underestimated in the 2013-14 budget, given the circa 10% increase in energy costs arising from the implementation of the Carbon Energy Pricing Mechanism. Seqwater confirmed that the electricity budget did not include costs associated with the purchase of green energy, and further that material carbon pricing issues relate to Grid assets only, as the consumption of irrigation assets is small.

Plant and fleet hire internal costs for dam operations were further broken down, as included in Table 5.9. The fleet allocation budget was determined by calculating a representative annual lease charge, which was calculated on whole of life costs excluding fuel, oil and tyres, assuming an average vehicle life of 120,000km or five years. The budget for fuel was calculated based on historical expenditure.

Table 5.9: Plant and Fleet Costs – Dam Operations

Location	*Fleet / Plant Type*	*Description*	*Fleet Allocation Budget ($)*	*Fuel Allocation Budget ($)*
Somerset Dam	Vehicle	Ford Ranger 4x4 Utility	9,900	4,189
	Vehicle	Ford Ranger Space Cab	9,900	5,371
Wivenhoe Dam	Vehicle	Ford Range EL 4x4 Utility	12,400	2,049
	Vehicle	Ford Ranger XL 4x4 Space Cab	12,900	4,207
	Vehicle	Ford Ranger XL 4x4 Utility	12,400	2,016
	Vehicle	Toyota Aurion	8,760	5,708

Source: SKM (2012).

Wivenhoe Dam has approximately 12.5 FTEs operational staff assigned to the dam while Somerset has two. When considering the number of personnel across both Dam Operations and Group Support, SKM considered the number of vehicles allocated to be reasonable.

With regards to fuel allocation, utilising a fuel efficiency of 10km/L for all vehicles and fuel cost of 155 cents per litre (cpl), the fuel allocation budget provides for between 13,000 km and 37,000 km per annum. During site visits, Seqwater operational personnel confirmed that they drove approximately 30,000 km per year. SKM considered the fuel allocation budget for vehicles to be reasonable.

Costs for the fleet and plant aspects of materials and other for the Central Brisbane River WSS were calculated by the Seqwater Fleet Manager. In calculating the costs associated with the operation of plant and fleet, Seqwater applied a cost of 155 cents per litre (cpl) for fuel. In comparison, the RACQ lists the retail Brisbane unleaded fuel price for April 2012 as 148.8cpl for unleaded and 153.8 cpl for diesel. While the Seqwater unit fuel cost is higher than retail costs for both unleaded and diesel, this is not unreasonable and may potentially be a result of an applied safety factor or inefficiencies of supply of the small volume of fuel required by Seqwater. In calculating the fleet allocation budget, Seqwater has adopted an

average vehicle life of 120,000 km or five years. This adopted life is similar to that utilised by the South East Queensland Distribution Retailer Entities, and was therefore considered to be reasonable.

Group Support

Group Support costs are broken into a number of categories including materials and consumables, energy fixed, cleaning, other chemicals in addition to plant and fleet hire as shown in Table 5.10.

Table 5.10: Group Support Costs – Additional Details

Expense	*Description*	*Further detail supplied by Seqwater*	*2013-14 forecast*
Materials & Consumables – Somerset Dam	Rec Maintenance	The budgets were based on 2011-12 actuals and YTD trend for the 2011-12 year.	$20,800
	Ground Maintenance	Somerset has a workshop on site. Costs relate to consumables and materials associated with the ongoing operation of the workshop and its equipment.	$10,400
Materials & Consumables – Wivenhoe Dam	Minor material and consumables for repairs and maintenance	The budgets were based on 2011-12 actuals and YTD trend for the 2011-12 year.	$31,200
	Consumables and materials for onsite workshop	Wivenhoe Dam has a workshop on site. Costs relate to consumables and materials associated with the ongoing operation of the workshop and its equipment.	$10,400
Energy Fixed – Wivenhoe Dam	Energy costs for rec grounds	The budgets were based on 2011-12 actuals and YTD trend for the 2011-12 year.	$10,250
Cleaning – Wivenhoe Dam	Cleaning rec facilities	The budgets were based on 2011-12 actuals and YTD trend for the 2011-12 year.	$10,400
Other Chemicals – Somerset Dam	Weed control chemicals	The budgets were based on 2011-12 actuals adjusted for known differences in the weed control program	$20,800
Plant & Fleet Hire Internal – Somerset Dam		Budget Calculated by Fleet Manager based on vehicle estimated costs and fuel used	$110,122
Plant & Fleet Hire Internal – Wivenhoe Dam		Budget Calculated by Fleet Manager based on vehicle estimated costs and fuel used	$133,257

Source: SKM (2012).

Equipment and consumables and chemicals are also purchased on an as needed basis for operational repairs and emergency works. The budget for equipment and consumables, cleaning and chemicals was calculated by escalating historical expenditure at 4%.

The budget for 2013-14 electricity was determined by escalating the 2010-11 historical spend. SKM noted that providing that the method of obtaining electricity has not changed since the 2012-13 GSCs review, electricity costs are considered efficient. The electricity prices may be underestimated in the 2013-14 budget, given the circa 10% increase in energy costs arising from the implementation of the Carbon Energy Pricing Mechanism.

> No information regarding the quantity of electricity used or the unit rates for its supply was [initially] available. However, energy costs were developed by escalating historical cost information. In the 2012-13 Grid Service Charges review SKM found the energy unit prices paid by Seqwater to be reflective of current market prices and hence efficient. SKM consequently considered the energy costs for the Central Brisbane River WSS to be efficient.

Plant and fleet hire internal costs were further broken down, as included in Table 5.11.

Table 5.11: Group Support – Plant and Fleet Costs

Location	*Fleet / Plant Type*	*Description*	*Fleet Allocation Budget*	*Fuel Allocation Budget*
Somerset Dam	Vehicle	Toyota Landcruiser 4x4 Utility	$12,720	$6,545
	Tractor / Mower	David Brown 1210	$2,400	$920
	Tractor / Mower	Kubota Tractor	$2,400	$1,195
	Watercraft	Polycraft	$7,680	$3,469
	Watercraft	Polycraft centre console	$7,680	$3,604
	Watercraft	Noosa Cat Australia 2300	$22,800	$2,400
	Vehicle	Toyota Hilux 4x4 Dual Cab	$9,720	$5,917
	Tractor / Mower	Kubota Tractor	$2,400	$1,268
	Vehicle	Ford Ranger Space Cab	$9,800	$5,379
Wivenhoe Dam	Vehicle	Toyota Landcruiser Workmate	$12,720	$4,479
	Vehicle	Toyota Landcruiser LC Workmate	$8,400	$7,922
	Vehicle	Nissan Patrol ST 4x4 Utility	$10,440	$5,051
	Truck	Isuzu FRR550	$15,800	$3,019
	Tractor / Mower	Kubota Tractor	$2,400	$749
	Tractor / Mower	New HollandTC35	$2,400	$730
	Tractor / Mower	Kubota Tractor	$2,400	$400
	Tractor / Mower	Kubota Tractor	$2,400	$1,837
	Tractor / Mower	John Deere 8120	$10,200	$6,875
	Watercraft	Yamaha Waverunner Jetski	$2,400	$1,026
	Watercraft	Stessco Bass Boat	$7,500	$750
	Forklift	2005 Toyota 450K8-H	$5,500	$1,787
	Vehicle	Ford Ranger 4x4 Utility	$9,900	$3,280

Source: SKM (2012).

With regards to fleet and plant types and numbers, SKM assessed the use of vehicles, tractor/mowers, forklift and watercraft to be reasonable, particularly considering the utilisation inferred from the fuel allocations.

SKM had insufficient information to assess the fleet allocation budget.

Water Quality Monitoring

Water quality monitoring costs for the Central Brisbane River WSS are associated with water quality monitoring of Wivenhoe and Somerset Dams in addition to the Wivenhoe Dam recreational water treatment plant (WTP).

While under the *Water Act* there is no requirement for Seqwater to provide water of a certain quality to irrigation users, under the resource operating plans and licences subordinate to the Act, Seqwater is required to monitor water quality in storages, releases and recreational areas according to the state government procedures.

In regard to water quality monitoring costs, more details are provided in Table 5.12.

Table 5.12: Water Quality Monitoring Costs

Item	*2012-13*	*2013-14*
Somerset Dam		
Water sampling	$18,680	$19,427
Routine testing	$52,000	$54,080
Unscheduled testing	$6,240	$6,490
Event testing	$14,560	$15,142
Wivenhoe Dam		
Water sampling	$17,060	$17,742
Routine testing	$56,368	$58,623
Unscheduled testing	$2,080	$2,163
Event testing	$14,560	$15,142
Wivenhoe Dam Recreational WTP		
Routine testing	$46,500	$48,360
Unscheduled Testing	$3,500	$3,640
Events testing	$4,000	$4,160

Source: SKM (2012).

Water quality sampling comprises collection and analysis of water samples. Currently routine sampling and analysis for both the Wivenhoe and Somerset Dams and the Wivenhoe recreational water treatment plant is undertaken by an external contractor selected by public tender.

The contract for water quality sampling was awarded in accordance with the State Procurement Policy by an open tender process. Further, the water sampling program was developed in accordance with resource operating plans, licenses and for the recreational water treatment plant, in accordance with the plant's HACCP Plan. SKM therefore considered the costs associated with the water sampling programs as reasonable.

Conclusion

The operating expenditure item was assessed as prudent as the need for the expenditure has been demonstrated.

The operating expenditure was assessed efficient as the scope is appropriate, the operating expenditure in support of regulated service delivery is consistent with industry practice and the costs are consistent with prevailing market conditions.

However, SKM queried the inclusion of a number of items to the 'materials and other' cost group as they were considered as potentially belonging to alternative cost groups of 'direct labour and contractors' in addition to repairs and maintenance. These items were identified above.

In response, Seqwater stated that the groups of costs reported in the NSP are Labour, Contractors and Materials and Other, with security contractors being classed under 'other' in the NSP. This is different to the classification adopted by the Authority in its Terms of Reference, where it has separated expenditure under materials and other and expenditure under labour and contractors. SKM considered that it may be appropriate for further reviews for Seqwater and the Authority to discuss and agree upon appropriate budget categories for allocating expenditure items.

Nevertheless, SKM considered the costs detailed in Table 5.13 to be necessary for the operation of the Central Brisbane River WSS, and therefore were assessed as reasonable.

Table 5.13: Summary of Recommended Costs

Project	**Costs ($'000) *2013-14***
Seqwater's April NSP materials and other	1,529
SKM's proposed budget for materials and other	1,529
Seqwater's November NSP materials and other	1.507
Authority's final proposed budget for materials and other	1.507

Source: SKM (2012).

Authority's Analysis

Seqwater's November 2012 estimate revised the total to $1.507 million ($1.106 million in 'other' and $0.4 million in materials).

Since the revised amount is lower and not substantially different from that assessed by SKM, the Authority accepted the revised amount of $1.507 million in 2012-13.

Item 2: Direct Labour

Stakeholder Submissions

Seqwater

Seqwater submitted a forecast direct labour cost for 2012-13 of $3.022 million ($3.143 million in 2013-14) (April 2012 submission - Seqwater 2012c). However, at the time of

SKM's analysis, Seqwater slightly revised the estimates to $3.089 million (2012-13) and $3.213 million (2013-14).

The November 2012 (Seqwater 2012al) revision estimated a lower direct labour cost of $2.967 million for 2012-13 for the Central Brisbane River WSS.

Other Stakeholders

QFF (2012) noted that operating costs in Central Brisbane River WSS appear high.

Consultant's Review

SKM indicated that actual costs were $2.7673 million in 2011-12 and budgeted costs were $3.022 million for 2012-13. The 2012-13 base forecast was built up from a zero base (i.e. using a bottom up method). This category of costs relates to direct labour and contractors only.

Item Description

The labour resources required to operate the Central Brisbane River WSS mainly relate to the operation of assets such as the Somerset and Wivenhoe Dams (including the catchment and the recreation areas associated with the dam) and the Kirkleigh and Wivenhoe (Recreation) WTP. The proposed 2013-14 costs for these operating expenditure items include:

(a) Somerset Dam, Operations - $219,000;

(b) Wivenhoe Dam, Operations - $1,479,000;

(c) Somerset Dam, Catchment Services - $582,000;

(d) Wivenhoe Dam, Catchment Services - $447,000;

(e) Wivenhoe Dam, Incident & Emergency - $263,000;

(f) Kirkleigh (Rec), WTP Ops - $72,000; and

(g) Wivenhoe (Rec), WTP Ops - $80,000.

The above items total to $3.143 million, which is equivalent to Seqwater's April 2012 estimate.

Seqwater has not provided any costs for contractors as the sample was made up of Seqwater direct labour costs only. Consequently there are no contractor costs to disclose.

Provided documentation

The documents used for this review are:

(a) Seqwater, 2013-14 Irrigation Pricing, Submission to the Queensland Competition Authority, April 2012;

(b) Seqwater, Central Brisbane River WSS, Network Supply Scheme;

(c) Seqwater, Information Request Response – QCA Irrigation Price Review 2013-17, RFI 014, Central Brisbane River WSS, Operations – Direct Labour and Contractors, 14 Aug 2012;

(d) Seqwater, Budget 2012-13, Salaries and Wages, Dam Operations;

(e) Seqwater, Budget 2012-13, Salaries and Wages, Group Support;

(f) Seqwater, Opex – Irrigation Updated YTD.xlsx; and

(g) Seqwater Enterprise Bargaining Certified Agreement 2009 – 2012.

Prudency

Wivenhoe and Somerset Dams are referable dams under the *Water Supply (Safety and Reliability) Act 2008*. To adequately satisfy Seqwater's regulatory obligations at these and other relevant assets, labour resources are needed to undertake:

(a) Dam Operations: to meet Market Rules requirements, water ownership and water use legislation, water information reporting requirements, dam safety and reliability legislation;

(b) Incident & Emergency: to comply with dam safety and reliability legislation;

(c) Catchment Services: to meet environmental protection legislation, recreation responsibilities, catchment management responsibilities, land ownership legislation; and

(d) Water Treatment Operations: to meet Market Rules requirements and recreation responsibilities.

Consequently the operating expenditure item was seen as prudent.

Efficiency

Seqwater's operating cost projections of labour are not based on any water demand cost drivers but are rather based on the 2012-13 budget. Seqwater does not view demand as a driver of labour costs. In SKM's view, basing the labour forecast cost on a previous budget is not satisfactory as actual costs may vary significantly from budget. SKM recommended that forecast costs be based on actual incurred costs taking into account trends exhibited by recent actual expenditure, changes in working practices and changes in assets being operated. Accordingly, additional information relating to actual historical expenditure was sought by SKM.

Seqwater also informed SKM that the costs being examined do not include any maintenance labour costs as these costs have been factored into the labour budgets for maintenance. The costs reviewed in this sample relate only to operations costs.

In response to SKM's request for information, Seqwater provided historical and budgeted costs covering the period between 2009-10 and 2012-13 (Table 5.14).

Table 5.14: Central Brisbane River WSS Labour Costs ($)

	2009-10 Actual	*2010-11 Actual*	*2011-12 Actual*	*2011-12 Budget*	*2012-13 Budget*
Employee Costs	1,054,256	2,428,227	2,767,302	2,625,316	3,089,128

Source: SKM (2012).

SKM noted that the budget information provided in Table 5.15 is not consistent with other information supplied by Seqwater in its response to SKM's RFIs although the difference is small. SKM understood that this apparent information inconsistency is due to the fact that Seqwater has updated their original submission and that the 2012-13 budget figure is consistent with the revised cost forecast. SKM confirmed that this is indeed the case. Seqwater informed SKM that the difference amounting to $67,000 relates to maintenance staff labour costs.

These were not included in the RFI because the Authority sample referred to "Operations" which does not include maintenance in the Seqwater model. However, no further details were provided and SKM's detailed review below was limited to the available information provided by Seqwater which was consistent with their original cost forecast and excluded the additional amount related to maintenance costs.

SKM sought from Seqwater information regarding the estimated quantity of FTEs assigned to the assets. The information provided by Seqwater is shown below in Table 5.16. The information provided in this case is consistent with the information submitted to the Authority. Overall, the proposed budget of $3,143,000 for labour cost for 2013-14 represents a growth rate of 6.5% pa since 2011-12. This is less than the 14% growth rate seen between 2010-11 and 2011-12.

Dam Operations are the largest contributor to direct operating costs. Dam Operations are responsible for operating, maintaining and monitoring Seqwater's 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 are relatively labour intensive as noted in Seqwater's submission.

Group Support (and catchment management) has responsibility for the development and delivery of recreation and catchment maintenance services for all operational assets. The team of rangers and bio-security officers ensures that asset management plans, processes, systems and practices are implemented in accordance with relevant regulatory requirements. Seqwater also has responsibility for the ongoing management and maintenance of any recreation sites associated with the dams.

While the use of Seqwater assets for recreational purposes is not a core Seqwater function, these facilities, which are a planning and operating licence condition of the assets, must be managed in a sustainable and environmentally responsible manner to ensure that Seqwater's core responsibilities and accountabilities are not adversely impacted. Under Seqwater's operating model, these maintenance activities have been separated from Dam Operations and Group Support has been made responsible for provision of these services.

The dams of Central Brisbane River WSS are the largest dams in Seqwater's system and thus play a critical role in the water supply system for SE Queensland. They also play a critical role in flood control. Given the significance of these assets for Brisbane and SE Queensland,

it is seen as a core activity and thus unlikely to be able to outsource the labour requirements. The services provided by the operators of the recreational WTP and irrigation scheme are also likely to be difficult to contract to third party operators given that they are small and the operators are required to know their assets intimately.

Benchmarking

SKM considered the pay rates to be consistent with other operators and rangers employed by Seqwater and are considered to be reasonable for such employees. They were also consistent with the Seqwater EBA. SKM compared these labour costs with their internal database and found that the rates provided by Seqwater fell within the applicable benchmark range. In addition to the base salary, dam operators and rangers are paid an allowance to compensate the staff for being on-call when not on duty. This allowance can be substantial given the remoteness of many of these assets.

In the 2012-13 budget Seqwater allocated 12.5 FTEs to operate the Wivenhoe Dam. This was considered reasonable given the size of the dam. The smaller Somerset Dam is operated by 2 FTEs. This was consistent with the other dams operated by Seqwater although Somerset Dam is larger than most of the other dams in Seqwater's system.

About 12 FTE (including overtime) Catchment Services staff have been allocated to the Central Brisbane River WSS. These staff operate between both Wivenhoe and Somerset Dams and given the large areas that these assets cover, SKM recognised that a relatively large number of staff (compared to other Seqwater WSSs) may be required.

Rangers are responsible for tasks including the control of feral weeds and animals, public safety and security and the maintenance of the recreational sites. They are also trained to supplement dam operators during peak events as would occur during a flood.

SKM noted that the estimate for overtime budgeted for Wivenhoe which accounts for over 20% of the normal time estimates is significantly greater than the overtime estimate for Somerset (13%). SKM recommended that the overtime allocated at Wivenhoe be reduced to the same proportion of normal time as at Somerset. SKM also queried the inclusion of the cost of the camp manager at Somerset. Instead of allocating the cost of the camp manager to irrigators, SKM recommended that the cost of the camp manager be recovered from users of the campsite which would be consistent with normal commercial campsite operations.

SKM noted that the Ministerial Direction requires all recreation costs to be included in the scheme's cost and the revenue received from users of the campsites is offset against the scheme costs. This arrangement however is inefficient and would potentially cross subsidise campsite users.

In contrast with other WSSs, where most of the effort for maintaining the recreational area is performed by contractors, the rangers at Somerset and Wivenhoe do most of this work with little outsourced to contractors. The duties are also wider than the recreation areas and include the whole catchment where they also undertake mowing, slashing and controlled burns. Such activities at Central Brisbane River WSS are not outsourced to contractors.

SKM also considered that the overall numbers of dam operators is appropriate given that some excess capacity may be necessary during normal operations to address peak requirements. This excess may thus be utilised in non-core activity like mowing and minor maintenance work when such peak events are not present. However, the current operating model does not take advantage of this capacity but rather incurs extra maintenance contracting costs, in SKM's view, unnecessarily and thus inefficiently.

SKM also noted that Seqwater has employed a number of other staff at Wivenhoe including a dam safety engineer, a seismic officer, compliance coordinator, business centre officer, and an operations analyst. Given the centrality of Wivenhoe to the SEQ water supply system and the existence of a visitor's centre to cater to the large number of visitors to the Wivenhoe Dam, SKM accepted the need for these additional staff.

SKM had a concern with the Dam Operations overtime budget at Somerset Dam. It amounts to approximately 30% of normal time cost. An overtime allocation of over $42,000 for Dam Operations has been provided in Seqwater's submission. SKM recognised that Somerset Dam, while smaller than Wivenhoe, is still relatively large in comparison with all the other dams in Seqwater's system and thus there may be a greater need for labour resources. Nevertheless SKM considered that allocating the equivalent of 0.6 FTE to overtime is excessive and recommended that overtime allowance be reduced to about 20% of normal time cost.

Similarly, the overtime for Catchment Services for Wivenhoe accounts for over 20% of normal time requirements. In contrast, the overtime for Somerset Dam accounts for about 13% of normal time cost. Given that both rangers at Wivenhoe and Somerset Dams perform the same roles, SKM recommended allocating a similar overtime budget allocation.

In contrast, the overtime that has been budgeted for the Wivenhoe Dam Operators and WTP operators for the Central Brisbane River WSS is reasonable.

SKM's major concerns arising from this review of Central Brisbane River WSS is the high overtime budgeted for Catchment Services at Wivenhoe Dam. SKM recommended that the overtime budget at Wivenhoe be reduced to the same level as Somerset Dam. While SKM was of the opinion that the cost of the Camp Manager should be removed from the cost of the water supply scheme and recovered directly from users, the Ministerial Direction requires all recreation costs be included in the scheme cost with any revenue from the campsite included as an offset.

Another minor adjustment SKM recommended is the allowance provided for Catchment Services at Wivenhoe Dam. Given the 90% time allocation for the rangers at Wivenhoe Dam, SKM believed that the allowance should also reflect that time allocation. Similarly, the average time allocation for dam operators at Wivenhoe Dam is 60%. SKM thus recommended that allowances allocated to Wivenhoe Dam from Dam Operations should reflect this allocation.

SKM's estimates are compared to Seqwater's forecast costs for 2012-13 in Table 5.15.

Table 5.15: Summary of Forecast Labour Costs 2012-13

Service Activity	*Asset*	*Salaries & Wages Applied ($)*
Catchment Services	Somerset Dam	560,268
	Wivenhoe Dam	381,198
Dam Operations	Somerset Dam	206,006
	Wivenhoe Dam	1,412,587
Water Treatment	Kirkleigh Rec WTP	69,029
	Wivenhoe Rec WTP	77,450
Incident & Emergency	Wivenhoe Dam	249,762
Other Incidental Costs	-	10,700
Total Labour Cost for 2012-13		**2,967,000**

Source: SKM (2012).

Conclusion

The operating expenditure item was assessed as prudent as the need for the expenditure was demonstrated.

The operating expenditure was assessed as not efficient as the operating expenditure in support of regulated service delivery was not consistent with industry practice and the costs did not represent the least-cost means of providing the requisite level of service within the relevant regulatory framework. In particular, SKM considered that the budgeting for 1 FTE dam operator equivalent of overtime for dam operations is excessive and that a budget for overtime equivalent to 0.5 FTE is more reasonable.

SKM suggested that Seqwater will need to address the following information shortfall to further clarify dam operations labour costs:

(a) reasons for the high rate of overtime at Somerset Dam for Dam Operations and Wivenhoe for Catchment Services; and

(b) information regarding any efficiency targets set for productivity improvements.

In SKM's view, forecast 2013-14 labour costs in the Central Brisbane River WSS costs may be reduced by setting overtime at a lower level to reflect the current low utilisation of dam operating staff. No reasons were provided for such a high rate of overtime and unless adequate justification is provided, SKM recommended adjusting the allocation of overtime to reduce the labour costs allocated to Central Brisbane River WSS in 2012-13 to $2.967 million.

Authority's Analysis

The Authority noted that SKM's recommendation is for a 3.7% reduction to Seqwater's 2012-13 budgeted amount.

SKM's revised estimate corresponds with Seqwater's revised (November 2012) submission in regard to this cost item.

The Authority recommended that SKM's conclusion be accepted and the revised forecast be included for pricing purposes.

Submissions Received from Stakeholders on the Draft Report

Seqwater (2013a) submitted that the premise stated by SKM that the current operating model at Wivenhoe and Somerset Dams incurs extra maintenance costs is incorrect. Seqwater indicated that it had advised SKM that rangers do undertake mowing, slashing, controlled burns and similar tasks that are not outsourced to contractors.

Authority's Response to Submissions Received on the Draft Report

The Authority accepts Seqwater's submission that staff undertake area maintenance tasks rather than contractors.

Conclusion

Draft Report

Sampled Operating Cost Items

For the Central Brisbane River WSS, the Authority sampled two direct operating cost items. The Authority accepted the recommended efficient cost estimates developed by SKM.

Compared to Seqwater's revised estimates, SKM found materials and other costs to be prudent and efficient, but identified savings in direct labour costs. These are shown in Table 5.16 for 2012-13.

Unsampled Operating Costs

For unsampled items, as outlined in Volume 1 the Authority reviewed in detail approximately 55% of proposed direct operating expenditure for prudency and efficiency. At issue was how to address scheme-specific direct operating expenditure that was not reviewed in detail. Accordingly, the Authority drew upon the results of the SKM review which identified an average saving across all sampled operating cost items.

As outlined in Volume 1, the Authority considered there was merit in applying an average, uniform saving to unsampled direct operating expenditure (excluding electricity and rates) of 5%[6] .

Final Report

Based on this methodology, the Authority's recommended direct operating expenditure is outlined below (Table 5.16 refers).

The Authority has not changed the Draft Report sampled items.

[6] The Authority chose not to include a large reduction in Repairs & Maintenance costs in the Central Lockyer WSS that were included in the original sample in error.

Table 5.16: Review of Budgeted 2012-13 Direct Operating Expenditure (Nominal $'000)

	Seqwater (April 2012 NSP)	*Seqwater (November 2012 NSP)*	*Authority's Recommended*
Sampled Item			
Materials and Other	1,486	1,507	1,507
Direct Labour	3,022	3,089	2,967
Unsampled Items			5% saving to apply

Source: Seqwater (2012c), Seqwater (2012al) and QCA (2012).

In addition to the efficiency adjustments for the 2012-13 year, the Authority also reduced forecast direct operating costs by a further 1.5% per annum in real terms as a general productivity gain, applied cumulatively for each of the four years of the regulatory period (2013-14 to 2016-17). Details are provided in Volume 1.

Summary of Direct Operating Costs

Submissions Received from Stakeholders on the Draft Report

MBRI (2013d) submitted that the Authority's sampling process for operating costs is not representative as it is not based on a stratified random sample. The sampling was across only 3 operating cost categories – direct labour, repairs and maintenance and materials and other – and electricity, rates and dam safety costs were not reviewed.

Scope of Operating Costs

During consultation in January (QCA 2013) irrigators (including representatives from MBRI) questioned whether Seqwater's activities associated with flood mitigation and in providing water to the community of Esk and were being incorporated in costs for irrigators.

Irrigators during consultation (2013) submitted that costs associated with water quality testing between Wivenhoe Dam and Mt Crosby WTP should not be allocated to irrigators. In addition, W. Keller (2013) submitted that water testing is only done for domestic supply and this cost should not be passed on to irrigators. Keller suggested that testing should only occur at Mt Crosby WTP due to in-flows occurring below Wivenhoe Dam.

MBRI (2013d) submitted that:

(a) information about the sampled cost items was scant, and by definition, dam operations costs include costs associated with flood mitigation for both dams;

(b) the Central Brisbane River WSS share of rates costs is high as a proportion of Seqwater's total rates bill. MBRI noted that it may be because Seqwater owns considerable lands around the margin of the dams, including land area that represents the flood compartment of the dam. MBRI considered that rates relating to lands above full supply level should be excluded. MBRI was concerned that rates for other dams, for example, Hinze Dam, may be included; and

(c) irrigators pump from the river at their own expense, including electricity. Seqwater's electricity costs are not directly or indirectly attributable to or beneficial for MBRI irrigators. It is non-irrigation customers that benefit from electricity use.

Authority's Response to Submissions Received on the Draft Report

The Authority considered but rejected the option of a stratified random sample on the grounds of cost and complexity. Rather, the Authority concentrated on material items and reviewed about 55% of total submitted operating costs. Cost items such as electricity and rates were not considered to be of sufficient materiality to warrant detailed review (except for electricity in some WSSs).

Scope of Operating Costs

In response to stakeholder concerns regarding certain costs being allocated to irrigators, the Authority can confirm that:

(a) costs of HP supply to the town of Esk are separated from the cost base in determining the irrigation share. Esk (Somerset Regional Council) has a small MP volume which is assigned a share of MP operating and renewals costs.

(b) the Authority's Draft Report analysis excluded direct operating costs related to flood mitigation and flood management. The issue of the flood control centre is discussed below in regard to non-direct costs; and

(c) although Somerset Regional Council has a modest allocation of 15 ML of MP WAE, given Council is also a customer of the scheme, a cost allocation is attributed to this share. However, the Authority has not recommended a price for non-irrigation MP customers as this is outside the Minister's Direction.

Costs are incurred in the monitoring of water between Wivenhoe Dam and Mt Crosby WTP. Seqwater (2013f) advised that monitoring occurs at 11 sites and is required under ROP under the Water Act and to meet Seqwater's Wivenhoe Drinking Water Quality Management Plan under the *Water Supply (Safety and Reliability) Act 2008*. Seqwater indicated that the testing is for various contaminants including ecoli, nutrients, iron and manganese, algae, sulphate, metals and other sediments. The cost below the dam wall is $270,508 (2013-14) and is allocated to irrigators as per other fixed costs.

Water testing activities is a requirement of the ROP. However, given that the costs relate substantially to drinking water requirements, there is a case for costs to be apportioned to reduce the level of costs subsequently apportioned between irrigators and other users. In the absence of details, and given the low materiality, the Authority has applied a 50% reduction to water testing costs in Central Brisbane River WSS before apportioning to irrigators.

In relation to other issues raised by MBRI since the Draft Report:

(a) the Wivenhoe/Somerset Dam infrastructure is predominantly for urban and industrial use but has a flood mitigation role. While Seqwater proposed $7.33 million in direct scheme operating costs for 2012-13, this amount had already excluded $3.95 million in additional costs incurred in the scheme. Seqwater indicated that it reviewed all items and removed those that pertained to urban water supply. These exclusions related to dam safety, some catchment and land management services, some water quality testing, and some dam operations and repairs and maintenance costs. Seqwater's exclusions did not specifically identify flood mitigation costs separately from supply related costs;

(b) the apportionment of rates costs between storage and flood mitigation functions is problematic due to the difficulty of separating appropriate catchment costs with and without a flood compartment. An area of land above full supply level would still be required as part of the water supply operation of the dams, although a larger area would be required to accommodate the flood compartment. As noted above, Seqwater already excluded some catchment management costs. In the absence of detailed information, the Authority proposes to allocate rates costs according to the proportion of the dam capacity that is used for supply, that is 44%; and

(c) electricity costs are incurred in the safe operation of the dam, with large amounts used when the flood gates are operated. In the Draft Report, the total amount was shared across the user groups. The Authority recommends that electricity costs also be shared according to the proportion of the dam capacity that is used for supply (that is, 44%).

Since the Draft Report, Seqwater (2013f) advised that overall electricity costs have been reduced due to a move from a tariff basis to a large contestable contract basis in April 2012. The 2012-13 total cost fell from the original Tariff 22 estimate of $262,000 to $157,000. The Authority accepted the revised lower estimate and escalated the amount, assuming that 59% of electricity has a 23.1% increase and the remainder a 2.5% increase, to give an estimate of $180,000 for 2013-14.

Any end-of-period adjustment to account for material changes in costs must be justified by Seqwater in a submission to the Authority (post June 2017).

The Authority also recommends that fixed repairs and maintenance costs should also be allocated according to the proportion of the dams' capacity used for water supply, that is, 44%. The basis for this position is that repairs and maintenance costs tend to be asset-related and the Authority has already accepted that renewals costs should be allocated in this way.

However, the Authority proposes that Seqwater's estimated direct operations costs not be further allocated as Seqwater has already excluded urban-specific cost items. It is expected that costs such as labour are not substantially increased due to the flood mitigation function. The flood control centre is a non-direct cost and is discussed below.

Conclusions

In summary, the major changes in total direct operating costs since the Draft Report for the Central Brisbane River WSS are the inclusion of consultation costs and a reduction in electricity costs to reflect contestable market rates.

A comparison of Seqwater's and the Authority's draft and final estimated total direct operating costs for the Central Brisbane River WSS is set out in Table 5.17**.**

For the Final Report, these costs are also subject to a revised allocation to irrigators including:

(a) exclusion of 50% of the $270,000 in water (quality) testing costs as being specifically for urban services; and

(b) a share of rates, repairs and maintenance costs and electricity costs between water supply services (44%) and flood mitigation services (56%).

The cost allocations between irrigation and other sectors to take account of these changes are not shown in Table 5.17. The Authority has taken these adjustments into account in determining cost-reflective tariffs for irrigation.

The Authority's proposed costs include all specific adjustments and the Authority's proposed cost escalations as noted above.

Table 5.17: Direct Operating Costs (Nominal $'000)

Costs	*Seqwater*				*Authority*			
	2013-14	***2014-15***	***2015-16***	***2016-17***	***2013-14***	***2014-15***	***2015-16***	***2016-17***
					Draft			
Operations	5,391.2	5,589.8	5,796.0	6,010.0	5,265.5	5,365.6	5,466.5	5,568.0
Repairs and Maintenance – Planned	1,576.7	1,639.8	1,705.4	1,773.6	1,474.5	1,510.1	1,546.2	1,582.8
Repairs and Maintenance - Unplanned	644.0	669.8	696.6	724.4	391.9	401.4	411.0	420.7
Dam Safety	0	0	53.8	0	0	0	48.9	0
Rates	706.4	724.1	742.2	760.8	706.4	724.1	742.2	760.8
Total	**8,318.4**	**8,623.5**	**8,994.0**	**9,268.7**	**7,838.4**	**8,001.2**	**8,214.7**	**8,332.3**
					Final			
Operations					5,152.2	5,249.6	5,347.7	5,446.4
Repairs and Maintenance – Planned					1,474.5	1,510.1	1,546.2	1,582.8
Repairs and Maintenance - Unplanned					391.9	401.4	411.0	420.7
Dam Safety							48.9	
Rates					706.4	724.1	742.2	760.8
Consultation Costs					7.2	7.4	7.5	7.7
Total					**7,732.2**	**7,892.6**	**8,103.5**	**8,218.4**

Source: Seqwater (2012al) and QCA (2012, 2013). Note: Totals vary from NSP due to exclusion of revenue offset (which is dealt within the following chapter), and rounding.

5.5 Prudency and Efficiency of Non-Direct Operating Costs

Introduction

Seqwater (2012aj) advised that all non-direct costs were assigned to operating expenditure as it does not have sufficiently disaggregated data at the renewals project level for it to allocate non-direct costs to individual renewals projects.

The prudency and efficiency of Seqwater's overall non-direct costs were reviewed for the Authority by SKM as part of the 2012-13 GSCs review.

For this investigation, Seqwater made adjustments to the aggregate non-direct cost estimates that it submitted to the Authority's GSC investigation to exclude costs not relevant to the provision of irrigation services. The costs remaining after these adjustments were made were then allocated to irrigation tariff groups using the total direct costs as the cost allocator (see Volume 1).

Previous Review

As noted above, since there were no charges applicable to irrigators in the Central Brisbane River WSS prior to this proposal, no previous review occurred in this scheme.

Draft Report

Stakeholder Submissions

Seqwater

Seqwater submitted that non-direct costs for 2012-13 were derived at the aggregate level for all schemes and allocated to individual schemes based on the proportion of direct costs attributable to the individual scheme (except for insurance costs which were allocated by asset replacement value). These costs were then escalated forward to derive forecast non-direct costs for the regulatory period.

Total non-direct costs and those allocated to the Central Brisbane River WSS are outlined below in Table 5.18**.**

Table 5.18: Seqwater's Actual and Proposed Non-Direct Operating Costs (Nominal $'000)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Seqwater	9,524	9,762	10,006	10,256	10.512
Central Brisbane River WSS	7,084	7,261	7,442	7,628	7,819

Source: Seqwater (2012aj) and Seqwater (2012al).

As noted in Volume 1, Seqwater initially submitted non-direct forecasts in April 2012. Seqwater subsequently revised these forecasts in November 2012 following the Authority's review of GSCs and the Minister's subsequent decision and further analysis by Seqwater of bulk water costs.

A comparison of the alternative estimates for the Central Brisbane River WSS is provided in Table 5.19 for non-direct operations costs.

Table 5.19: Non-Direct Operations Costs 2012-13 Forecasts (Nominal $'000)

	April 2012 NSP	*November 2012 NSP*	*Variance ($,000)*	*Variance*
Water Delivery	768.7	754.8	(13.9)	(2%)
Asset Delivery	343.2	371.8	28.6	8%
Business Services	1,897.2	1,508.6	(388.6)	(20%)
Organisational Development	773.1	710.3	(62.9)	(8%)
Executive	76.1	111.9	35.8	47%
Flood Control	2,631.0	2,380.4	(250.6)	(10%)
Other	234.1	64.2	(169.9)	(73%)
Total Non-Direct Operations	**6,723.5**	**5,902.0**	**(821.5)**	**(12%)**

Source: Seqwater (2012c) and Seqwater (2012al).

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.

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

Seqwater's submitted non-direct operating costs for the Central Brisbane River WSS are detailed in Table 5.20 below (November 2012 NSP - Seqwater 2012al).

Table 5.20: Seqwater's Forecast Non-Direct Operating Costs (Nominal $'000)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations					
Water Delivery	754.8	773.7	793.0	812.8	833.2
Asset Delivery	371.8	381.1	390.6	400.4	410.4
Business Services	1,508.6	1,546.3	1,585.0	1,624.6	1,665.2
Organisational Development	710.3	728.0	746.2	764.9	784.0
Executive	111.9	114.7	117.5	120.5	123.5
Flood Control	2,380.4	2,439.9	2,500.9	2,563.5	2,627.5
Other	64.2	65.8	67.5	69.2	70.9
Sub-Total	**5,902.0**	**6,049.6**	**6,200.8**	**6,355.8**	**6,514.7**
Non-Infrastructure Assets	361.4	370.4	379.7	389.2	398.9
Insurance	691.4	708.7	726.4	744.6	763.2
Working Capital	128.9	132.1	135.5	138.8	142.3
Total	**7,083.8**	**7,260.9**	**7,442.4**	**7,628.4**	**7,819.2**

Source: Seqwater (2012aj) and Seqwater (2012al).

In addition to operations related non-direct costs, Seqwater identified costs associated with the use of non-infrastructure assets, insurance and working capital.

The Central Brisbane River WSS utilises a range of non-infrastructure assets (buildings and plant and equipment). These assets were 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 Scheme. Seqwater has used depreciation costs as a proxy for the cost associated with use of these assets. However, these depreciation costs were not captured for the WSS. Accordingly, aggregate non-infrastructure depreciation for 2012-13 were allocated to facilities on the basis of direct costs and escalated forward over the forecast period.

Seqwater's annual insurance premium cost for 2012-13 is forecast at $6.2 million. The major components to the premium include industrial special risks, machinery breakdown, public liability, professional indemnity, contract works and directors and officers insurance.

Seqwater has allocated its 2012-13 premium to the Central Brisbane River WSS using the replacement value of scheme assets. This value was escalated by CPI to determine a premium for each year of the forecast period.

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

Seqwater allocated a portion of this working capital allowance to the Central Brisbane River WSS on the basis of revenue attributable to the scheme. The 2012-13 working capital allowance was then escalated by CPI to provide a forecast for each year of the regulatory period.

Seqwater proposed that all non-direct costs be escalated from the 2012-13 base year in line with its estimate of inflation, based on the mid-point of the Reserve Bank of Australia's (RBA's) target range for CPI at the time of its submission, being 2.5% per annum.

Other Stakeholders

QFF (2012) requested justification for non-direct costs being higher than direct costs.

During Round 1 consultation in June 2012 (QCA 2012c), irrigators questioned how much Seqwater is paying on catchment management activities and proposed that rather than irrigators paying for catchment management (which delivers environmental and water quality benefits to urban customers), Seqwater should pay irrigators for better catchment management practices on farm.

Irrigators also asked during Round 1 consultation in June 2012 (QCA 2012c) whether any costs related to the presentations to and findings of the dam enquiry and any associated legal action will be included in irrigators' water charges.

Stakeholders (GVWB 2012, QCA 2012c) argued that recreational costs should be borne by users or government, and that recreational use is limited due to water quality (particularly in SEQ where the costs and use by the public is high).

Authority's Analysis

The Authority (QCA 2012b) assessed Seqwater's non-direct operating costs as part of its 2012-13 GSC Review. That review concluded that Seqwater's operating costs (including non-direct costs) should be reduced by 2.5% to reflect a general efficiency gain.

The Government subsequently increased the general efficiency gain to 3.0% and removed Seqwater's proposed recruitment of 62.5 Full Time Equivalents (FTEs) for vacant and new positions, both to apply to the 2012-13 year.

Seqwater (2012aj) took these adjustments into account in its revised submission to the Authority. As these costs have been imposed by Government, the Authority did not propose a further reduction for 2012-13. However, as the implications of the merger are currently being considered by Government, further adjustments to the Authority's estimates of non-direct costs may be necessary for the Final Report.

The Authority noted that Seqwater adjusted its aggregate non-direct costs to exclude those costs not relevant to the provision of irrigation services, including costs associated with technical warranty and development, water treatment operations including catchment and water quality management, and costs associated with planning and policy for major non-irrigation capital projects. The Authority accepted these adjustments, noting that specific cost attribution may remain problematic in some cases.

Further to these adjustments for the 2012-13 year, the Authority also applied a productivity adjustment to the established efficient cost base for 2012-13 for anticipated future efficiency gains brought about by technological, organisational, and operational improvements in service delivery. The Authority recommended a reduction in forecast non-direct operating costs by a further 1.5% per annum in real terms as a general productivity gain, applied cumulatively for each of the 4 years of the regulatory period (2013-14 to 2016-17).

For working capital, the largest portion of irrigators' payments to Seqwater arises from fixed charges paid in advance, whereas GSC charges are paid in arrears. This means that, for irrigation activities, Seqwater would not suffer an economic cost resulting from the timing difference between receivables and payables. Seqwater was requested to provide further substantiation of its proposal. However, as further evidence was not forthcoming, the Authority did not incorporate a working capital allowance in this instance.

The Authority accepted Seqwater's proposed escalation of 2.5% per year for 2013-17 for non-direct costs.

In response to other stakeholders, the Authority noted that non-direct costs do not exceed direct costs in irrigation schemes. Further, the Authority reduced non-direct costs when direct costs are reduced.

As noted above, the Authority proposed that catchment management and water quality activities conducted for the sole benefit of urban water supply be removed from costs.

In regard to flood enquiry costs, Seqwater advised the Authority that the cost of participation in the flood enquiry is not relevant to irrigators. However, it is possible that some costs related to enquiry recommendations may be relevant at some future date. No provision for these costs was made in the 2012-13 budget and consequently, no costs were carried forward into the 2013-17 period for irrigation prices.

In response to submissions that recreation costs not be passed on to irrigators, the Ministerial Direction explicitly requires that Seqwater be allowed to recover efficient recreation costs.

Submissions Received from Stakeholders on the Draft Report

Seqwater (2013a) submitted that the 1.5% efficiency reduction should not be applied to insurance as Seqwater has limited ability to influence the amount of insurance premiums. This is particularly as Seqwater has made large claims for flood damage in recent years. Insurance is negotiated on a portfolio of assets and not a scheme basis. Therefore Seqwater submitted that the efficiency reduction should not apply to insurance costs in any scheme.

During consultation in January (QCA 2013) irrigators noted that non-direct costs should decrease as a result of the merger in January of LinkWater, the WGM and Seqwater.

MBRI (2013d) submitted that:

(a) the costs associated with the flood operations centre should be excluded;

(b) insurance costs appear high for Central Brisbane River WSS, at $708,000 for 2013-14, which represent 30% of Seqwater's total 2011 insurance costs. This appears high given the significant assets owned by Seqwater in other schemes, including assets not related to the provision of water storage and irrigation. Allocating these costs to Central Brisbane River WSS could be to the financial detriment of irrigators; and

(c) non-direct costs of 47% of total costs is not indicative of efficient operations, and could indicate poor accounting practices.

Authority's Response to Submissions Received on the Draft Report

In response to Seqwater, as insurance service provision is a competitive market, it should be possible to negotiate savings in premiums. However, the Authority agrees that since the flood inquiry and other events subsequent to the Draft Report, it may not be reasonable for Seqwater to be expected to achieve year-on-year reductions in insurance premium costs.

The Authority concludes that Seqwater's insurance premiums for 2013-17 should be exempt from the productivity gains due to current circumstances (that is, recent claims made by Seqwater and increasing insurance risks due to climate change). Accordingly, the Authority accepts Seqwater's submission and will not apply the 1.5% annual saving to insurance costs.

In relation to merger efficiencies, Seqwater advised that some of the reductions already applied, such as the removal of 62.5 FTEs, were in anticipation of efficiency gains from the merger. These are already incorporated in the Authority's estimated efficient costs.

The Authority accepts Seqwater's recommendation to not change non-direct costs allocated to irrigators, as there is no firm basis to do so (and noting that it would at this stage, result in an increase in non-direct costs to irrigators).

In response to MBRI issues:

(a) in the Draft Report, the Authority included flood control costs in the Central Brisbane River WSS on the grounds that the management of the Wivenhoe Dam flood mitigation capability is a cost of owning and operating the dam regardless of the type or priority of the water supplied. The Authority therefore allocated a share of these costs to irrigators as users of the dam.

    However, as noted above, the Authority accepts that although irrigators do benefit from flood mitigation, the allocation of costs on the basis of volumes of WAE could result in a disproportionate share of these costs being passed through to irrigators. Further, irrigators connected to urban water supplies are already contributing through their bulk water charge.

    The Authority proposes to exclude flood control centre costs of $2.38 million from non-direct costs;

(b) insurance costs have risen in recent years and comparisons with 2011 premiums do not provide guidance. The Authority notes that insurance costs allocated to the Central Brisbane River WSS are approximately 13% of Seqwater's total insurance costs. The Authority considers this to be reasonable given the size of Wivenhoe and Somerset dams, but notes that as this is a relatively immaterial cost, it was not reviewed in detail by the Authority. Seqwater sources its insurance in a competitive market, indeed Seqwater conducted a global search the costs are considered to be efficient. As insurance costs are asset-related, the Authority proposed to allocate the costs according to the share of flood mitigation (56%); and

(c) while non-direct costs appear to be a significant proportion of total operating costs at 47%, this is comparable to the proportion of 46% found by the Authority for SunWater (QCA 2012). Non-direct costs are incurred by Seqwater (and SunWater) as they operate in a centralised and compliance-driven business. The Authority has subjected both direct and non-direct costs to review and retains its view that the level of non-direct costs is appropriate for Seqwater.

The Authority's draft and final recommended non-direct costs to be recovered from the Central Brisbane River WSS (from all customers) are set out in Table 5.21. The allocation of these costs between HP and MP customers is discussed below.

Table 5.21: Non-Direct Operating Costs (Nominal $'000)

Costs	Seqwater				Authority			
	2013-14	2014-15	2015-16	2016-17	2013-14	2014-15	2015-16	2016-17
					Draft			
Non-Direct Operations	6,049.6	6,200.8	6,355.8	6,514.7	5,842.0	5,928.5	6,014.9	6,101.0
Non-Infrastructure	370.4	379.7	389.2	398.9	349.1	352.4	355.6	358.8
Insurance	708.7	726.4	744.6	763.2	698.1	704.6	711.1	717.4
Working Capital	132.1	135.5	138.8	142.3	0	0	0	0
Total	**7,260.9**	**7,442.4**	**7,628.4**	**7,819.2**	**6,889.3**	**6,985.6**	**7,081.6**	**7,177.2**
					Final			
Non-Direct Operations					3,372.3	3,422.3	3,472.0	3,521.7
Non-Infrastructure					343.5	346.7	349.9	353.0
Insurance					708.7	726.4	744.6	763.2
Working Capital					0	0	0	0
Total					**4,424.5**	**4,495.4**	**4,566.5**	**4,638.0**

Source: Seqwater (2012al) and QCA (2012, 2013).

Insurance and labour utilisation rates (which affect non-direct and direct costs) are addressed in Volume 1.

5.6 Allocation of Non-Direct Operating Costs

Draft Report

It is necessary to determine the method to allocate non-direct costs across Seqwater's business, including irrigation tariff groups. By definition, non-direct costs do not directly apply to specific activities within schemes, and thereby cannot be allocated according to their relevance to individual service contract activities.

Seqwater's submissions describe a two stage process for cost assignment:

(a) Stage 1 – Seqwater attributes its directs costs to the tariff groups in which they are incurred, and allocates its non-direct costs to tariff groups using the preferred cost allocation methodology for this stage; and

(b) Stage 2 – Seqwater allocates all of the fixed costs assigned to tariff groups in Stage 1 above (which at this point include direct and non-direct costs), between MP and HP WAE within each tariff groups using the preferred cost allocation methodology for this stage.

Stage 1 – Allocation of Costs to Tariff Groups

Stakeholder Submissions

Seqwater

Seqwater (2012aj) proposed to allocate non-direct costs to tariff groups using total direct costs (TDC) (with the exception of insurance premium costs and working capital) because:

(a) TDC represents a reasonable driver of the non-direct operating costs of Seqwater's irrigation activities;

(b) it is relatively simple to administer, identify and extract from the reporting system;

(c) it allows regular comparison between forecast and actual outcomes, and to update allocations where appropriate; and

(d) it results in cost allocations consistent with expectations about non-direct cost incurrence.

Seqwater noted that the Authority used direct labour costs (DLC) as the cost allocator in the recent SunWater review. Seqwater's comparisons of cost allocations using both DLC and TDC showed use of DLC resulted in significantly more costs being allocated to schemes than considered reasonable.

For those components of its non-direct costs which are not allocated using TDC, Seqwater proposes to allocate:

(a) insurance premium costs to tariff groups on the basis of the replacement value of insured assets; and

(b) working capital allowance to tariff groups according to forecast revenue.

Authority's Analysis

In the Authority's SunWater review, analysis by Deloitte was largely ambivalent on which of these two measures DLC or TDC (out of the several considered and rejected) would be most suitable to allocate non-direct costs. Both were relatively highly ranked.

Although the DLC approach was adopted for SunWater, the Authority concluded that this did not necessarily apply for other entities. The Authority considered the approach proposed by Seqwater was fair and reasonable, having regard to Seqwater's particular cost accounting systems and procedures. The Authority considered that TDC (excluding variable electricity) is a suitable method for allocating non-direct costs.

Stage 2 – Allocation of Costs Between Priority Groups

Previous Review

For the 2006-11 price paths, all costs were apportioned between MP and HP customers according to WPCFs in both bulk and distribution systems.

Stakeholder Submissions

Seqwater

Seqwater (2012a) has proposed the same approach to stage 2 cost allocation as that proposed by the Authority for the SunWater investigation. For SunWater, for bulk schemes, fixed maintenance costs were allocated to priority groups using headworks utilisation factors (HUFs), and fixed operations costs (including insurance premium costs) were allocated 50% using HUFs and 50% using current nominal WAEs.

Seqwater proposed that renewals and maintenance costs are allocated to MP using the Headworks Utilisation Factor (HUF). As noted in Chapter 4, Seqwater commissioned Parsons Brinckerhoff (PB) to calculate the HUF percentage for the scheme, using the methodology endorsed by the QCA for irrigation pricing in SunWater schemes.

However, PB found that a strict application of the methodology resulted in a perverse outcome for the Central Brisbane River WSS. As a result, PB suggested an alternative method is to calculate the ratio between MP and HP customers factored by the cut-off percentage for MP entitlements, which calculates to 2.1%.

Accordingly, the proposed allocation of maintenance costs to MP customers is 2.1%.

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. Seqwater adopted the same approach as the Draft Report. Seqwater acknowledged a different approach was adopted in the final report (50% HUF and 50% nominal WAE), which resulted in MP being allocated a greater share of these costs.

Seqwater assigned working capital costs between MP and HP customers proportional to lower bound revenue. The balance of costs were allocated to MP based on a 50:50 split between the adjusted asset utilisation factor (2.1%) and the nominal ML entitlements attributable to MP customers (2.5%).

Other Stakeholders

RFPL (2012) submitted that as water supplied to irrigators is of a lower priority it should not be considered of equal value. Attributing 2% of volume to irrigation use is not correct when taking into account environmental purposes.

S. and H. Sinclair (2012b) and J.B. and B.L. Keller (2012) similarly commented that there are no actual or justifiable costs or customer services that are directly related to the supply of MP water to irrigators and that irrigators have no impact on the day to day operations of the dam. In addition, Seqwater cannot measure irrigation use as it is lost in environmental flow estimations.

S. and H. Sinclair (2012b) also suggested that if dam operations are included in costs, the allocation of costs should be based on the volumetric percentage against combined supply capacity, rather than against Seqwater's allocation.

J.M. Craigie (2012a) submitted that:

(a) the costs associated with the Somerset Dam's operation have nothing to do with the provision of water to irrigators in Central Brisbane River;

(b) whilst the storage volume of Wivenhoe and Somerset Dams are included in the water sharing rules for MP WSS in the Moreton ROP, this is merely a mechanism to ensure

priority is given to High Class A priority allocations and that the MP irrigation customers are essentially supplied by unsupplemented sources below Wivenhoe Dam (including tributaries from the Lockyer and mid-Brisbane catchments); and

(c) flood mitigation costs in both Wivenhoe and Somerset Dams are irrelevant to Central Brisbane irrigators, as the beneficiaries of any flood mitigation operations are all the communities below the dam including cities of Brisbane and Ipswich.

Authority's Analysis

The Authority noted Seqwater's submission that the initial HUF calculated by PB has resulted in a perverse outcome for the Central Brisbane River WSS.

In Chapter 4 (Renewals Annuity) the Authority reviewed Seqwater's alternative "adjusted HUF" methodology provided by PB which is based on the single trigger of 14.9% of useable volume corresponding with MP allocations being reduced to zero. The Authority noted, however, that the Moreton ROP prescribes a range of triggers which represent a progressive reduction in MP allocations once the useable volumes in Somerset and Wivenhoe dams reach less than 50%.

Announced allocations associated with MP are reduced progressively over a range of useable volume scenarios and not just when the less than 15% trigger is met (see Table 4.6 in Chapter 4).

Accordingly, the Authority considered that a more appropriate approach would be to include reference in the HUF calculation to this range of scenarios. On this basis, the Authority arrived at an allocation to irrigation of 1.6% rather than the 2.1% proposed by Seqwater.

For the Central Brisbane River WSS, the Authority, therefore, recommended that:

(a) fixed repairs and maintenance costs be allocated to MP customers using adjusted nominal WAE (1.6% of costs to MP WAE); and

(b) all other fixed operating costs (including insurance premiums) be allocated 50% using adjusted nominal WAE (1.6% of costs to MP as above) and 50% using current nominal WAE (2.46% of costs to MP).

In response to RFPL (2012), the Authority agreed that water should be valued to reflect different supply reliabilities and has recommended accordingly. The costs of meeting compliance obligations (including environmental management) are a legitimate cost of supplying water for irrigation purposes, and are required to be included in Seqwater's costs under the Referral Notice.

In response to S. and H. Sinclair (2012b), the Authority took into account adjusted volumetric capacities as measured by HUFs so that cost allocation reflects different supply reliabilities where appropriate. WAEs were used to allocate costs only where users of water face the same reliability of supply.

In response to J.M. Craigie (2012a), the Authority considered that:

(a) as noted above, costs not related to irrigation services have been excluded from the cost base, while those that are common to both irrigation and non-irrigation customers are allocated in the manner recommended;

(b) the Authority's alternative approach to the HUF methodology was considered to provide a fair and reasonable allocation between HP and MP but the WRP process

defines nominal allocations taking into account both supplemented and unsupplemented sources; and

(c) flood mitigation benefits could be expected to accrue to all users downstream of the dams, including riparian irrigation users. It could be expected that flood impacts on irrigators would be less than if the dams did not exist.

Submissions Received from Stakeholders on the Draft Report

During consultation in January (QCA 2013) irrigators (including representatives from MBRI) questioned the Draft Report's cost allocation approach – specifically:

(a) irrigators do not agree that some costs should be allocated on the basis of nominal WAE as almost all activities are required to provide HP WAE. Accordingly, MP WAE should be allocated a relatively smaller share of costs than nominal WAE would imply; and

(b) allocating 50% of fixed operations costs using nominal WAE overstates the benefits received as no irrigation water is ordered and, generally, irrigators do not have meters that require reading. Accordingly, irrigators suggest that a smaller portion of costs should be allocated compared to the 2.5% (based on nominal WAE) being proposed.

W. Keller (2013) and stakeholders during Round 2 consultation in January (QCA 2013), also submitted that the proposed cost allocation methodology is unfair. Specifically, cost allocation needs to reflect the fact that irrigators receive significantly less benefit when announced allocations fall below 100%. If announced allocations drop below a certain level, then, depending on irrigation activity, certain commercial irrigation activities may cease.

MBRI (2013d) submitted that it does not accept the allocation of non-direct costs, as the allocation of non-direct costs across WSSs may be disproportionate to that for other operations undertaken by Seqwater. Seqwater is a very significant organisation with large range of activities and errors in allocation of non-direct costs are possible and could be substantial.

MBRI (2013d) also noted that Seqwater does not provide a release service to irrigators and that irrigators do not benefit from improved reliability. MBRI (2013e) submitted that there is an obligation in the Water Resource Plan that demands that the destination of all releases from the Dam is to be documented. MBRI considered that such documentation does not exist and therefore there is no service to irrigators provided by Seqwater.

Authority's Response to Submissions Received on the Draft Report

The key issue relates to whether operational differences in the Central Brisbane River WSS have been taken into account, in particular that no water is ordered and, generally, irrigators have no meters that require reading. As outlined in the Draft Report, water use log books are expected to be submitted and reviewed by Seqwater, but Seqwater is yet to finalise a program of comprehensive meter installation.

As meter reading, water ordering, release scheduling and water releases are typically operations costs in other schemes, and as these costs are likely occur to a lesser extent for irrigators in Central Brisbane River WSS, there is a case to allocate less operations costs to irrigators than for other WSSs.

Granular data is not available from Seqwater (raising some doubt as to the correct proportion of costs to be allocated using WAE).

Given the characteristics of the Central Brisbane River WSS, and the issues raised by MBRI concerning the absence of release services, the Authority considers that for the Central Brisbane River WSS only, allocating 50% of fixed operations costs (on the basis that such costs should be related to service provision) using nominal WAE may result in an over-allocation of costs relative to benefit.

The Authority considers that the relative insignificance of irrigation in the customer base means that the proportion of customer service costs relating to irrigators is very small.

On balance, for the 2013-17 price path, the Authority recommends that instead of allocating fixed operations costs on a 50/50 basis between adjusted and nominal WAE, 100% of such costs should be allocated by adjusted WAE (1.6%). This substantially reduces the cost allocation to the irrigation sector.

5.7 Cost Escalation

Draft Report

Seqwater proposed that where its costs rise in line with inflation, it has adopted the mid-point of the Reserve Bank of Australia's (RBA's) target range for CPI at the time of its submission, being 2.5% per annum.

For direct labour costs, Seqwater proposed an annual increase of 4% over the 2013-17 period. This aligned with the Authority's SunWater recommendations and was in line with historic growth in labour cost indices over the past five to 10 years.

Similarly, Seqwater proposed a 4% escalation for materials and contractors costs, also consistent with the SunWater report and growth in relevant ABS construction cost indices over the last 10 years.

Seqwater submitted that electricity costs comprise only a small proportion of total operating costs of the irrigation water supply schemes and are difficult to forecast. Seqwater has proposed that electricity costs in the 2012-13 budget be escalated by inflation (2.5%) for the regulatory period (from 2013-14) with a proposed settlement at the end of the regulatory period to reflect the actual electricity costs incurred

Seqwater has proposed that other direct operating cost categories (that is, other than direct labour and contractors and materials) and all non-direct costs, be escalated from the 2012-13 base year in line with inflation.

Authority's Analysis

The Authority's analysis of cost escalation is detailed in Volume 1.

The Authority recommended that for the regulatory period 2013-17:

(a) the costs of direct and non-direct labour and contractors should be escalated by 3.6% per annum, rather than 4% as proposed by Seqwater;

(b) the costs of direct materials should be escalated by 4% per annum;

(c) the cost of repairs and maintenance should be escalated by 4% per annum;

(d) other direct and non-direct costs should be escalated by 2.5% per annum; and

(e) electricity should be escalated by 2.5% per annum. However, should Seqwater sustain material electricity cost changes above the escalated level, consideration should be given to an application by Seqwater to the Authority for an end-of-period adjustment.

Submissions Received from Stakeholders on the Draft Report

Seqwater (2013a) advised that the actual enterprise bargaining increase for 2012-13 is 2.2% and the average salary increment is approximately 3%. Seqwater submitted, therefore, that labour cost escalation for 2012-13 could be about 5.2 %.

However, as future enterprise bargaining outcomes are not known and as average salary increments may trend down over-time (if staff turnover is low); Seqwater submitted that the annual nominal escalation factor for total labour costs should be 4% for 2012-17. This is preferred to the Authority's draft proposal of 3.6% per annum in nominal terms.

Seqwater clarified that it accepts the Authority's draft recommended annual nominal escalation for contractors at 3.6% per annum for 2012-17.

Seqwater (2013a) agreed that [from 2013-14] electricity should be escalated by 2.5% per annum in nominal terms. However, in the event that Seqwater experiences material actual electricity cost increases (or decreases) relative to the recommended escalated levels, Seqwater may apply to the Authority for an end-of-period adjustment to future prices.

QFF (2013b) accepted the escalation rates recommended in the Authority's Draft Report.

MBRI (2013d) accepted that escalation occurs but that irrigators (as price-takers) must seek efficiencies to meet escalating costs and do not have the luxury of escalation. MBRI (2013d) submitted that electricity costs can be the subject of an end-of-period adjustment.

Authority's Response to Submissions Received on the Draft Report

Labour Costs

The Authority notes that while Seqwater's submission argues for a possible 5.2% increase in labour costs from 2012-13 to 2013-14, Seqwater recommends that the annual nominal escalation factor for total labour costs should be 4% for 2012-17. However, Seqwater provides limited support for this recommendation, except that it acknowledges the uncertainty of future enterprise agreements and salary increments.

The Authority's draft recommendation was that all labour costs be escalated by 3.6% per annum for 2012-17, based on the Queensland Treasury (Treasury) labour cost forecasts for 2013-2016 (2012-13 State Budget). That is, the available three-year average forecast in Queensland Wage Price Index (WPI) growth is 3.6% per annum for 2013-16.

There is no forecast for 2016-17; however, the Authority considers Treasury's WPI forecast to be the most appropriate basis for escalating labour costs for 2012-17. The Authority also notes Seqwater's acceptance of the Authority's recommended 3.6% escalation for contractor costs.

As there are no compelling grounds to alter the Draft Report, the Authority recommends that total labour and contractor costs be escalated at 3.6% per annum from 2012-13 to 2016-17.

To clarify that the above relates to total (direct and non-direct) labour costs, while Seqwater initially proposed a 2.5% escalation for non-direct labour costs, the Authority adopted a 3.6% escalation for all labour costs in its Draft Report. Seqwater has since submitted that the escalation for non-direct labour should be the same as for direct labour. The Authority

therefore recommends application of a 3.6% nominal escalation rate to all direct and non-direct labour costs from 2012-17.

Electricity

In February 2013, the Authority published the Draft Determination: Regulated Retail Electricity Prices 2013-14, which has been adopted as the basis for any 2013-14 regulated electricity tariffs incurred by Seqwater in its irrigation schemes.

While the Authority's draft electricity tariffs may change, this is the most current and public source of electricity forecasts for 2013-14. By adopting this approach, the Authority has effectively increased 2012-13 regulated electricity prices by about 15% (e.g. using the draft Tariff 22 for 2013-14). This does not apply in Central Brisbane River.

As noted earlier, in Central Brisbane River WSS, Seqwater has secured an unregulated electricity contract that represents an approximate $0.1 million saving (since the Draft Report) in 2012-13 dollars. To escalate this cost to 2013-14, the Authority has applied the 23.1% increase to the network charges component (59%), as submitted by Seqwater on the basis of advice from Energex. The 41% balance has been escalated by 2.5% (to 2013-14) as there is no published basis to escalate at a higher rate).

Beyond 2013-14, and consistent with the Draft Report, the Authority recommends the escalation of all electricity costs by 2.5% per annum for to 2014-17. The Authority also recommends that (any) material variations could be addressed via application for an end-of-period adjustment to future prices, and notes that this is supported by Seqwater and MBRI.

5.8 Summary of Operating Costs

Seqwater's proposed operating costs by activity and type are set out in Table 5.22. The Authority's draft recommended operating costs are set out in Table 5.23 and final recommended costs are in Table 5.24.

Table 5.22: Seqwater's Proposed Operating Costs (Nominal $)

Costs	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Direct Operations				
Labour	3,085,680	3,209,107	3,337,471	3,470,970
Contractors and Materials	1,171,558	1,218,420	1,267,157	1,317,843
Electricity	278,212	285,167	292,296	299,604
Other	855,739	877,132	899,060	921,537
Repairs and Maintenance				
Planned	1,576,725	1,639,794	1,705,386	1,773,602
Unplanned	644,015	669,775	696,566	724,429
Dam Safety	0	0	53,845	0
Rates	706,434	724,095	742,197	760,752
Non-Direct Costs				
Non-Direct Operations	6,049,565	6,200,805	6,355,825	6,514,720
Non-Infrastructure	370,439	379,700	389,193	398,922
Insurance	708,711	726,428	744,589	763,204
Working Capital	132,149	135,453	138,839	142,310
Total	**15,579,227**	**16,065,877**	**16,622,425**	**17,087,893**

Source: Seqwater (2012al).

Table 5.23: Authority's Draft Operating Costs (Nominal $)

Costs	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Direct Operations				
Labour	3,027,724	3,088,955	3,150,671	3,212,826
Contractors and Materials	1,118,356	1,142,511	1,166,912	1,191,544
Electricity	269,063	275,789	282,684	289,751
Other	850,354	858,340	866,193	873,903
Repairs and Maintenance				
Planned	1,474,471	1,510,098	1,546,216	1,582,807
Unplanned	391,948	401,419	411,019	420,746
Dam Safety	0	0	48,850	0
Rates	706,434	724,095	742,197	760,752
Non-Direct Costs				
Non-Direct Operations	5,842,043	5,928,547	6,014,893	6,100,991
Non-Infrastructure	349,141	352,420	355,645	358,810
Insurance	698,080	704,635	711,082	717,411
Working Capital	0	0	0	0
Total	**14,727,615**	**14,986,809**	**15,296,362**	**15,509,541**

Source: QCA (2012).

The Authority's draft recommended operating costs for 2013-14 were 5.5% lower than Seqwater's proposed amount, as defined in its November NSP (Seqwater 2012al).

For the Final Report, the most significant change was the exclusion of the flood control centre from total costs. Electricity costs are reduced, insurance costs slightly increased and additional consultation costs have been included. Total cost estimates are for the scheme as a whole (all sectors) and do not take account of cost allocation for flood mitigation or apportionment of water testing costs.

Table 5.24: Authority's Final Operating Costs (Nominal $)

	2013-14	*2014-15*	*2015-16*	*2016-17*
Direct Operations				
Labour	3,027,724	3,088,955	3,150,671	3,212,826
Contractors and Materials	1,094,120	1,117,785	1,141,692	1,165,826
Electricity	180,007	184,507	189,120	193,848
Other	850,354	858,340	866,193	873,903
Repairs and Maintenance				
Planned	1,474,471	1,510,098	1,546,216	1,582,807
Unplanned	391,948	401,419	411,019	420,746
Dam Safety	0	0	48,850	0
Rates	706,434	724,095	742,197	760,752
Consultation	7,175	7,354	7,538	7,727
Non-Direct Costs				
Non-Direct Operations	3,372,263	3,422,197	3,472,039	3,521,738
Non-Infrastructure	343,501	346,727	349,900	353,014
Insurance	708,710	726,428	744,589	763,203
Working Capital	0	0	0	0
Total	**12,156,709**	**12,387,904**	**12,670,024**	**12,856,390**

Source: QCA (2013).

6. TOTAL COSTS AND FINAL PRICES

6.1 Background

Ministerial Direction

The Ministerial Direction requires the Authority to recommend irrigation prices to apply to Seqwater WSSs. Prices are to apply from 1 July 2013 to 30 June 2017.

Recommended prices and tariff structures are to provide a revenue stream that allows Seqwater to recover:

(a) prudent and efficient expenditure on renewing and rehabilitating existing assets through a renewals annuity; and

(b) efficient operational, maintenance and administrative costs to ensure the continuing delivery of water services.

In considering the tariff structures, the Authority is to have regard to the fixed and variable nature of underlying costs. The Authority is to adopt tariff groups as proposed in Seqwater's NSPs and not to investigate additional nodal pricing arrangements.

The Ministerial Direction also requires that:

(a) where current prices are above the level required to recover prudent and efficient costs, current prices are to be maintained in real terms;

(b) where cost-reflective prices are above current prices, the Authority must consider recommending price paths to moderate price impacts on irrigators, whilst having regard to Seqwater's commercial interests; and

(c) for certain schemes or segments of schemes [hardship schemes], prices should increase in real terms at a pace consistent with 2006-11 price paths, until such time as the scheme reaches the level required to recover prudent and efficient costs.

Price paths may extend beyond 2013-17, provided the Authority gives its reasons. The Authority must also give its reasons if it does not recommend a price path, where real price increases are recommended by the Authority.

Previous Review

No charges were applicable to the irrigators in the Central Brisbane River WSS in the 2006-11 price path.

However, in the 2006-11 price paths for other schemes, real price increases over the five years were capped at $10/ML for relevant schemes. The cap applied to the sum of Part A and Part B real prices. In each year of the price path, the prices were also indexed by CPI.

6.2 Approach to Calculating Prices

In order to calculate Seqwater's irrigation prices in accordance with the Ministerial Direction, the Authority has:

(a) identified the total prudent and efficient costs of the scheme;

(b) identified the fixed and variable components of total costs;

(c) allocated the fixed and variable costs to each priority group where appropriate;

(d) calculated cost-reflective irrigation prices;

(e) compared the cost-reflective irrigation prices with current irrigation prices; and

(f) implemented the Government's pricing policies in recommended irrigation prices.

6.3 Total Costs

Based on the methodology outlined in previous chapters, the Authority has determined total efficient costs for all sectors for each tariff group. This is comprised of prudent and efficient renewals costs used as a basis for estimating the renewals annuity, and efficient direct and non-direct operating costs. In many schemes, external revenue sources can offset some of these costs.

Revenue Offsets

Draft Report

Seqwater receives revenue from property leases, recreation fees and the provision of town water supplies. To ensure that Seqwater is not overcompensated for the provision of services, this revenue needs to reduce the estimate of efficient costs.

Stakeholder Submissions

In the Central Brisbane River WSS, Seqwater initially included a revenue offset of $175,900. In the subsequent revised November 2012 NSP, the revenue offset was revised to $510,900 based on the 2012-13 expected amount of such revenue[7].

For the Central Brisbane River WSS examples of revenue offsets include the leasing of land, houses and buildings. In addition, recreational facilities also generate revenues that are off-set against lower-bound costs.

Authority's Analysis

The Authority noted that the proposed amount for the revenue offset is slightly higher than the recent average of $457,300 (over the 2009-10 to 2011-12 period). However, the Authority proposed to accept the amount of $510,900 as a revenue offset for the Central Brisbane River WSS ($2012-13).

Submissions Received from Stakeholders on the Draft Report

MBRI (2013d) submitted that based on Seqwater's 2011-12 Financial Statements it is not clear whether revenue offsets are reasonably allocated between schemes. MBRI queried whether offsets included revenue from houses at dams.

MBRI (2013e) further submitted that Seqwater benefits from property management by irrigators and should be considered an offset to costs incurred by irrigators.

[7] This revised figure is primarily based on 2010-11 and 2011-12 actual, and 2012-13 budgeted lease revenue subsequently being included. Seqwater now considers the revised figure of $490,900 to be comparable with the historical average.

Authority's Response to Submissions Received on the Draft Report

In the Draft Report, revenue offsets included lease revenue from land, buildings and houses at dams. Offsets were forecast by reference to actual amounts received in the three years to 2011-12. Seqwater also allowed for an increase in expected recreation revenue.

The Authority reviewed revenue offsets as part of its review of 2012-13 bulk water Grid Service Charges. Across Seqwater's business, total offsets (aside from irrigation revenue) were estimated at $1.26 million. The amount of $0.5 million for Central Brisbane River WSS represents around 40% of the total.

In relation to property management, the Authority notes that many irrigators cooperate with Seqwater to manage run-off impacts on water quality as well as manage impacts on river banks. In this respect, Central Brisbane River WSS irrigators are similar to irrigators in all multi-use schemes throughout the State. Irrigators themselves directly benefit from these activities and a positive external benefit also accrues to other users. The Authority does not consider that a further revenue offset (for these activities) is appropriate.

Summary of Total Costs

The Authority's Draft Report estimate of prudent and efficient total costs for the Central Brisbane River WSS for the 2013-17 regulatory period is outlined in Table 6.1.

Submissions Received from Stakeholders on the Draft Report

MBRI (2013a) notes in response to the Draft Report that the amounts removed by the Authority from Seqwater's estimates seem to be directed towards meeting a predetermined figure and appear to be based on arbitrary percentages, assumptions or judgement. Given irrigation WAE are not dependent on, and do not use Wivenhoe Dam infrastructure, a more appropriate comparison would be costs relating to dams solely used for irrigation purposes. MBRI rejected Wivenhoe-based costs as reflecting the costs of water supply in the scheme.

Authority's Response to Submissions Received on the Draft Report

The Authority's assessment of total costs was undertaken with no pre-conceived expectations.

As earlier noted, the regulatory framework clearly identifies that irrigation MP WAE in this WSS are supplemented by Wivenhoe and Somerset Dams. The Authority's assessment has led to a substantial reduction in the costs proposed by Seqwater, following further exclusion of flood related items (including a flood mitigation component of costs). The Authority recognises that the estimates were developed on the basis of limited available information. While there are judgements in the Authority's analysis, this was necessary due to the data limitations, arising from changes in Seqwater's business structure, climatic conditions and the limited period of time that Seqwater has managed the schemes.

A comparison with dams that are solely used for irrigation is not practical or relevant. In Seqwater's schemes, irrigation only schemes include Lower Lockyer and Cedar Pocket Dam WSS. Both have cost reflective prices that are substantially higher than irrigation cost reflective charges in Central Brisbane River WSS.

The Authority's Final estimates of total costs for Central Brisbane River WSS are shown in Table 6.1 to enable comparison to Draft Report estimates.

Total costs in 2012-13 are also provided including an imputed renewals annuity deflated from 2013-14 (not actual). Total costs reflect the costs for the service contract (all sectors) and do not include any adjustments for the Queensland Government's pricing policies.

Compared to the Draft Report, total costs are reduced with the exclusion of flood control centre costs from non-direct costs. Electricity costs are reduced since the Draft Report, insurance costs increased, and consultation costs have been included.

Table 6.1: Total Costs for the Central Brisbane River WSS (Nominal $)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Seqwater (April NSP)					
Renewals Annuity	1,159,603	1,188,593	1,191,679	1,292,517	1,559,178
Direct Operating	7,865,996	8,153,727	8,452,294	8,815,959	9,083,620
Non-Direct Operating	7,846,712	8,042,880	8,243,952	8,450,050	8,661,302
Less Revenue Offsets	(175,878)	(180,275)	(184,782)	(189,401)	(194,136)
Return on Working Capital	128,926	132,149	135,453	138,839	142,310
Total	**16,825,359**	**17,337,073**	**17,838,595**	**18,507,964**	**19,252,273**
Seqwater (November NSP)					
Renewals Annuity	1,005,756	1,030,900	1,031,781	1,107,854	1,459,661
Direct Operating	8,024,332	8,318,362	8,623,491	8,993,980	9,268,737
Non-Direct Operating	6,954,844	7,128,715	7,306,933	7,489,606	7,676,846
Less Revenue Offsets	(510,878)	(523,650)	(536,741)	(550,160)	(563,914)
Return on Working Capital	128,926	132,149	135,453	138,839	142,310
Total	**15,602,970**	**16,086,477**	**16,560,917**	**17,180,119**	**17,983,641**
Authority - Draft					
Renewals Annuity	-	1,064,840	1,052,713	1,140,142	1,590,977
Direct Operating	-	7,838,351	8,001,206	8,214,742	8,332,329
Non-Direct Operating	-	6,889,264	6,985,602	7,081,620	7,177,212
Less Revenue Offsets	-	(523,650)	(536,741)	(550,160)	(563,914)
Return on Working Capital	-	0	0	0	0
Total	**-**	**15,268,805**	**15,502,780**	**15,886,344**	**16,536,604**
Authority - Final					
Renewals Annuity	-	1,051,766	1,041,078	1,126,587	1,563,433
Direct Operating	-	7,732,234	7,892,552	8,103,496	8,218,435
Non-Direct Operating	-	4,424,475	4,495,352	4,566,527	4,637,955
Less Revenue Offsets	-	(523,650)	(536,741)	(550,160)	(563,914)
Return on Working Capital	-	0	0	0	0
Total	**-**	**12,684,825**	**12,892,241**	**13,246,451**	**13,855,910**

Source: Seqwater (2012c), Seqwater (2012al) and QCA (2012, 2013).

6.4 Fixed and Variable Costs

The Ministerial Direction requires the Authority to have regard to the fixed and variable nature of Seqwater's costs in recommending tariff structures for each of the irrigation schemes.

Draft Report

Stakeholder Submissions

Seqwater

Seqwater (2012s) submitted that all operations (including electricity), maintenance and renewal costs for the Central Brisbane River tariff group do not vary with water use (that is, they are 100% fixed costs).

Other Stakeholders

S. and H. Sinclair (2012) submitted that a 100% fixed tariff is not consistent with water conservation, as irrigators will tend to waste water. They suggested a tariff structure of Part A 70% and Part B 30%.

J.B. and B.L. Keller (2012) suggested a 60/40 or 50/50 split to fixed and variable charges.

RPL (2012) submitted that to encourage the efficient use of water in an area where trading may be limited, a fixed charge of 20% should apply with the remaining 80% paid if irrigators use the water.

Authority's Analysis

The Authority's review of SunWater irrigation pricing considered the issue of tariff structures, with a detailed review by Indec Consulting of the proportion of costs that could reduce when water demand is low. Details are in Volume 1.

The Authority noted that SunWater and Seqwater schemes share similar characteristics. Most of the costs associated with operating a bulk WSS are fixed and do not vary with water use. The Authority therefore, where appropriate, applied the Indec findings to Seqwater schemes.

In summary, the Authority considered that some costs in both bulk schemes and distribution systems will vary with water use. Accordingly, the Authority applied the findings determined for the SunWater Review to Seqwater schemes (Table 6.2 refers).

Table 6.2: Variable Costs

Activity	*% Variable in Bulk*
Labour	20%
Contractors	20%
Repairs and Maintenance	20%
Materials and Other	20%
Dam Safety	0%
Rates	0%
Electricity (pumping)	n.a.
Non-Directs	0%
Renewals Annuity	0%

Source: Indec (2011).

In response to comments, the Authority noted that the proposed price structure contains a higher fixed charge proportion than current charges, but is below the 100% proposed by Seqwater.

The Ministerial Direction requires the Authority to have regard to the fixed and variable nature of Seqwater's costs in recommending tariff structures for each of the irrigation schemes.

Final Report

No changes are proposed for the Final Report.

6.5 Allocation of Costs According to WAE Priority

Draft Report

To establish the irrigation share of fixed costs, total fixed costs must be allocated between MP and HP WAE in each relevant tariff group. Variable costs are allocated according to use of water.

In earlier chapters the Authority identified its preferred approach to allocating costs between MP and HP WAE.

Table 6.4 shows the resulting fixed revenue requirements for HP and MP allocations.

Final Report

For the Final Report, and in response to stakeholder comment, the Authority has adopted the adjusted WAE to allocate all costs between HP and MP. Compared to the Draft Report, this reduces irrigators' share of other operating costs.

The Authority's approach is summarised below in Table 6.3.

Table 6.3: Fixed Cost Allocation Between High and Medium Priority WAE

Cost Component	*Fixed Cost Allocation Methodology (Draft)*	*Fixed Cost Allocation Methodology (Draft)*
Renewals Annuity	Adjusted WAE	Adjusted WAE
Repairs and Maintenance	Adjusted WAE	Adjusted WAE
Other Operating Costs	50% by Adjusted WAE and 50% by Nominal WAE	Adjusted WAE

Source: QCA (2012). Note: Variable costs are allocated between MP and HP WAE according to water use by way of the Authority's recommended volumetric tariffs.

The resulting total fixed revenue requirements for HP and MP WAE and the irrigation share of the total fixed revenue requirement are shown below in Table 6.4, compared to the Draft Report estimates.

The revenue requirement is substantially reduced due mainly to the adjustments made by the Authority to exclude the flood control centre costs.

Table 6.4: Allocation of Fixed Revenue Requirement between MP and HP WAE 2013-14 (Nominal $'000)

Tariff Group	*High Priority Fixed Revenue Requirement*	*Medium Priority Fixed Revenue Requirement*	*High Priority Irrigation Share of Fixed Revenue Requirement*	*Medium Priority Irrigation Share of Fixed Revenue Requirement*
Central Brisbane River– Draft	13,625	271	0	261
Central Brisbane River - Final	11,168	149	0	144

Source: QCA (2012, 2013). Note: Includes some variations to the Draft Report as a result of further quality assurance.

6.6 Volumetric Charges

Draft Report

On the basis of its analysis of the share of total costs, the Authority has estimated total variable costs for the Central Brisbane River tariff group. To convert this estimate of total variable costs to a volumetric tariff requires the Authority to consider how such costs vary with each ML of use. An estimate of typical water use is required to align with estimated costs relating to management practices which seek to ensure services are made available when required.

In Central Brisbane River WSS, the majority of water use relates to non-irrigation (urban and industrial consumption). There were no available data regarding specific irrigation water use due to the absence of meters.

In the other Seqwater schemes, the Authority reviewed 10 years of annual use data. The Authority noted that, with the advent of the Water Grid, urban and industrial demand associated with the Central Brisbane River WSS is to be met from a range of sources including storages other than Somerset and Wivenhoe dams. This includes recycled and manufactured water sources. The Authority reviewed the available last four years of data

(sourced from the former WGM). This indicated that all sectors water use as a percentage of WAE in the Central Brisbane River WSS was 33% in 2008-09, 35% in 2009-10, 38% in 2010-11 and 40% in 2011-12.

The lower demand in the earlier years reflects the effect of drought and ongoing supply restrictions since the drought. Therefore, and consistent with the approach applied in the other Seqwater irrigation schemes, the Authority has adopted a water use estimate based on the average of those years that exceed the four year average for each tariff group to derive a typical water use estimate.

The average ratio was therefore 39%. The Authority assumed the same percentage applied to the irrigation sector.

Submissions Received from Stakeholders on the Draft Report

During consultations in January (QCA 2013), stakeholders (including representatives from MBRI) submitted that:

(a) calculation of the volumetric (Part B) charge should take into account irrigation-only water use as opposed to all sectors water-use. This would increase typical water use and decrease the Part B charge;

(b) water use assumptions should reflect irrigator demand being reduced in recent years due to drought and damage brought about by flooding; and

(c) the Authority needs to reconsider its calculation of a typical year to take into account MP WAE being permanently traded to higher-value uses due to the introduction of water charges.

MBRI (2013e) further submitted that the volumetric charge is flawed and based on a period where both irrigation and urban use were subject to restrictions and structural change. Log-book data shows that use has been spasmodic and limited since 2009 and this has been partly due to rainfall making irrigation unnecessary. A charge based on 40% urban use is wrong and significantly penalises MBRI members.

In a separate submission, MBRI (2013a) submitted that it would be a misuse of the Authority's power to base Part B charges on inappropriate water use guesses. MBRI noted there are log-book data available since 2005, and these would show the unusual distortions in use arising from three years of restrictions and two years of reconstruction following floods.

Authority's Response to Submissions Received on the Draft Report

In response to stakeholder submissions, the Authority considers that:

(a) variable costs have been presented on the basis of all sectors. Therefore it is necessary to use an all-sectors water use estimate;

(b) to avoid the distortion of low water use years the Authority has adopted a water use estimate based on the average of those years that exceed the four-year average;

(c) the Authority is unable to estimate the increase in water use that may arise from increased trading. However, the estimate of variable costs represents past costs divided by past water use.

As noted in Chapter 3, log-book related water use data has tended to be incomplete due to the modest level of WAE held by some irrigators and an inability to enforce reporting given that water for irrigation has historically been provided without charge.

Table 6.5 shows total variable costs (all sectors), the typical all sectors' average water use and the resulting volumetric charge.

Table 6.5: Derivation of Cost Reflective Volumetric Tariffs (2013-14 Nominal $)

Tariff Group	*Total Variable Costs ($'000)*	*Authority's Estimate of Typical Water Use (ML)*	*Volumetric Tariff ($/ML)*
Central Brisbane River - Draft	1,373	110,698	12.31
Central Brisbane River - Final	1,368 (1,122)[1]	110,698	10.14

Source: QCA (2012, 2013). Note: The volumetric charge is derived by taking the NPV of total variable costs divided by the NPV of average water use. Observable inconsistencies between $/ML and the costs divided by water use are due to the effects of this NPV approach and rounding (i.e. costs are in $'000s). 1. Total variable costs (shown in parentheses) are adjusted for the purposes of determining a volumetric tariff for irrigation by excluding a component for flood mitigation variable costs.

6.7 Cost-Reflective Fixed and Volumetric Tariffs

The Authority derived cost-reflective fixed and volumetric tariffs on the basis of assessed efficient costs identified above, and the recommended tariff structures.

These prices are cost-reflective only and do not take account of the Government's pricing policies. This is discussed in the next section.

Table 6.6 presents current tariffs, Seqwater's (April and November 2012) proposed tariffs and the Authority's Draft and Final Report cost-reflective tariffs.

The Final cost reflective tariffs are lower than the Draft Report, due to changes in cost allocation for flood mitigation costs, changes in the allocation of fixed operating costs between priority groups and other cost adjustments.

Table 6.6: Cost-Reflective Tariffs (Nominal $/ML)

Tariff Group	*Actual*	*Seqwater (April 2012)*	*Seqwater (November 2012)*	*Cost Reflective - Draft*	*Cost Reflective - Final*
	2012-13	*2013-14*	*2013-14*	*2013-14*	*2013-14*
Central Brisbane River					
Fixed (Part A)	n.a.	56.52	52.44	38.34	21.11
Variable (Part B)	n.a.	0.00	0.00	12.31	10.14

Source: Seqwater (2012aj), Seqwater (2012c), Seqwater (2012al) and QCA (2012, 2013).

Cost-reflective prices reflect the Authority's estimates of prudent and efficient costs, recommended tariff structures, and the allocation of costs to different priority groups.

6.8 Queensland Government Pricing Policies and Final Prices

Under the Ministerial Direction, where current prices are already above the level required to recover efficient allowable costs, water prices are to be maintained in real terms using an appropriate measure of inflation (as recommended by the Authority).

Where prices are below efficient cost recovery, prices are to be set to increase in real terms at a pace consistent with the 2006-11 prices until such time as the WSS reaches efficient costs, whereupon prices are maintained in real terms.

In addition, for tariff groups where the Authority's calculated tariffs that would otherwise result in a price increase for irrigators higher than the Authority's measure of inflation:

(a) the Authority must consider phasing in the price increase in order to moderate price impacts on irrigators but at the same time have regard for Seqwater's legitimate commercial interests;

(b) the price path may be longer than one price path period provided the Authority gives its reason for the longer timeframe; and

(c) the Authority must give its reasons if the recommendation is not to phase in prices.

The Authority notes that because charges currently do not apply for Central Brisbane River irrigators, there is no current revenue amount for comparison.

Irrigation Water Prices

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Stakeholder Submissions

Seqwater (2011aj) proposed a cost-reflective price of $56.52/ML Part A only fixed charge for 2013-14. This was revised in Seqwater's November 2012 NSP to a Part A charge of $52.44/ML.

S. and H. Sinclair (2012) suggested a price path for the Authority's consideration, with an initial price of $21.52/ML, increasing by $5/ML plus CPI each year for seven years. They suggested this tariff take the form of a 70/30 fixed variable split.

Authority's Analysis

On the analysis provided above, the Authority's Draft Report cost-reflective Part A tariff was $38.34/ML and the Part B volumetric tariff was $12.31/ML.

Given that irrigation tariffs have not previously applied, it was not possible to calculate current irrigation revenues, in the same manner as for other Seqwater schemes. Further, the Ministerial Direction does not specify a rate of increase to apply over a price path to the Central Brisbane River WSS. In considering this matter, the Authority considered a price path that 'moderates the price impacts on irrigators' and has 'regard for Seqwater's legitimate commercial interests'.

For reasons specified above, the Authority recommended that the cost-reflective volumetric charge of $12.31/ML apply from 1 July 2013.

The cost-reflective Part A charge is $38.34/ML in 2013-14. The Authority, however, did not consider it appropriate for prices to start at this level, as the Ministerial Direction requires a moderation of price impacts.

Applying the Authority's general approach to setting fixed charges would result in an opening Part A charge of $2/ML. However, such an approach does not have sufficient regard for Seqwater's legitimate commercial interests and is unlikely to promote trading. As no charge has previously applied, the Authority expected that introduction of charges to result in increased water trading as some irrigators who do not use their WAE will seek to avoid the fixed charge.

The Authority considered that water should move to its best and highest value use, and the trading from an unproductive owner, to a productive owner will increase agricultural output and economic activity. Accordingly, the Authority considered that the fixed charge should promote trading.

The starting Part A charge should balance Seqwater's commercial interest and the promotion of trading with the need to allow irrigators the time to adjust.

Therefore, the Authority considered the charges faced by (competing) irrigators in neighbouring WSSs. Under such an approach, the initial Part A tariff for the Central Brisbane River WSS is the simple numerical average of recommended Part A tariffs in the Logan River, Lower Lockyer Valley and Warrill Valley WSSs.

Central Lockyer Valley WSS is also relevant geographically but no Part A fixed charge applies until 1 July 2015.

The average of these recommended Part A tariffs was $22.66/ML. This starting price in the Central Brisbane River WSS moderates the price impact on irrigators and accommodates Seqwater's legitimate commercial interests (compared to a starting Part A of $2/ML).

Moreover, a Part A of $22.66/ML would better promote permanent and temporary water trading in the scheme than a starting Part A of $2/ML. That is, with a higher (Part A) holding cost associated with WAE, water trading will likely increase, moving WAE to higher value uses.

The Authority considered that the increase of $2/ML real per annum that the Authority applied to other tariff groups, is appropriate to apply to the Central Brisbane River WSS.

In conclusion, therefore, the Authority recommended a starting price that is the average of the 2013-14 recommended Part A tariffs for Logan River, Lower Lockyer Valley and Warrill Valley WSSs. The Part A tariff would increase by $2/ML in subsequent years. This approach is likely to achieve cost-reflective pricing over two regulatory periods (assuming no change in costs).

The Authority noted that the starting price suggested by S. & H. Sinclair (2012) is largely comparable with the Authority's recommended Part A charge. However, the Authority proposed the price be increased at $2/ML per year rather than $5/ML per year as suggested by Sinclair.

The Authority also did not recommend price paths beyond 2013-17 as this is beyond the scope of the Ministerial Direction.

Submissions Received from Stakeholders on the Draft Report

MBRI (2013a) and irrigators during consultation in January (QCA 2013) noted in response to the Draft Report that taking the average of the Part A fixed tariffs of the Logan River, Lower Lockyer Valley and Warrill Valley WSSs to establish a Part A fixed charge to apply to the Central Brisbane River WSS, is misleading given the different characteristics of these WSSs (for example, soil type, access to alternative water supply and reliability).

MBRI considered that the resulting Part A charge has no relevance to Central Brisbane River WSS as it does not reflect an appropriate level of cost recovery and is merely an attempt to match a set of contrived costs.

MBRI (2013d) also submitted that a Part A tariff would not provide an incentive to trade water. The majority of MBRI water users hold small allocations where the impact of a Part A tariff is minimal. MBRI indicated that 68% of MBRI irrigators hold less than 60ML.

MBRI (2013d) indicated that the Authority has made no attempt to calculate the costs of compliance, the costs of collecting the revenue, institutional administration and business impacts. MBRI suggested that no price be set without a proper analysis of costs of collecting the revenue.

QFF (2013) submitted that while the recommended tariff for 2013-14 is set having regard to prices in other schemes, there will be an impact on customers who have not had to pay charges in the past.

Authority's Response to Submissions Received on the Draft Report

The Authority's Draft Report approach did not attempt to take account of scheme differences but rather sought to establish a basis for estimating a fixed charge which reasonably reflects the average cost of providing water services.

In doing so the Authority was concerned that to move straight to cost reflective levels would give a Part A charge that is out of line with neighbouring schemes.

The Authority does not accept that a Part A tariff, albeit small, would not provide some incentive to trade. Some irrigators will face positive holding costs for the first time compared to zero holding costs in the past.

The Authority also does not accept that the costs of revenue collection do not justify the return. Whether Seqwater chooses to apply the recommended charges in the light of the compliance costs involved is a matter for Seqwater.

The above issues notwithstanding, the Authority found that as a result of changes to cost allocation in the Final Report, the cost-reflective Part A charge is now lower than the average of the three neighbouring schemes. Hence the Draft Report approach is no longer appropriate.

In establishing a price path under these circumstances, the Authority considered alternative options, either to:

(a) Option 1 - move immediately to a cost reflective Part A charge, and set a price path with increases limited to CPI; or

(b) Option 2 - establish a price path to reach the cost reflective level by 2016-17, with annual increases of $2/ML plus CPI. That is, for 2013-14 the starting fixed charge is $15.11/ML.

Option 1 enables the scheme to reach cost recovery in 2013-14, and should promote trading, but does not allow for a moderation of the initial impacts on irrigators. Option 2 moderates the impact on irrigators, but requires a CSO contribution until cost recovery is reached. Option 2 also recognises that inactive WAE holders seeking to sell allocation may need time to trade WAE, and this option reduces the holding costs until a trade can be completed.

Given that, under the Ministerial Direction, the Authority is to moderate the price impacts on irrigators, while having regard to Seqwater's commercial interests, the Authority recommends the Option 2.

The Authority's final recommended price paths for Central Brisbane River WSS during 2013-17 are shown in Table 6.7.

As projected 2013-14 revenues are below cost-reflective revenues, the Authority recommends a price path where fixed charges increase annually by $2 per ML (plus CPI) until cost-reflective levels are reached. Volumetric charges are increased at CPI over the balance of the regulatory period (see Table 6.8).

Prices are presented in nominal terms and will not be varied by Seqwater during the regulatory period, regardless of annual changes in CPI. This approach is consistent with that adopted for SunWater irrigation prices 2012-17 and was approved by Government.

Table 6.7: Water Prices 2013-17 (Nominal $/ML)

Tariff Group	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Central Brisbane River - Draft				
Fixed (Part A)	22.66	25.28	28.01	30.86
Volumetric (Part B)	12.31	12.62	12.94	13.26
Central Brisbane River - Final				
Fixed (Part A)	15.11	17.54	20.08	22.73
Volumetric (Part B)	10.14	10.40	10.65	10.92

Source: QCA (2012, 2013).

Revenue Requirement

The estimated revenue required to meet cost reflective prices for irrigation is $291,800 in 2013-14.

Table 6.8 summarises the revenue maintenance requirement consistent with the Authority's proposed pricing approach. The split between variable revenues, based on a 10-year average irrigation water use, and the balance to be recouped through fixed charges is also shown.

Table 6.8: 2013-14 Revenue Requirement (Nominal $'000)

Tariff Group	*Total Revenue Requirement – Cost Reflective*	*Revenue Requirement – Based on Initial Price*	*Fixed Revenue*	*Variable Revenue*
Central Brisbane River Draft	291.8	171.0	153.4	17.6
Final	168.9	128.3	102.3	26.0

Source: QCA (2012, 2013).

6.9 Impact of Recommended Prices

Draft Report

The impact of any change in prices on the total cost of water to a particular irrigator, can only be accurately assessed by taking into account the individual irrigator's water use and nominal WAE (see Volume 1).

The Authority also noted that the capacity of irrigators to pay cost-reflective charges is beyond the scope of the Ministerial Direction. In the Authority's SunWater review, the original Ministerial Direction was amended to exclude consideration of capacity to pay from the Authority's brief. The same approach is considered to apply to the Seqwater irrigation review.

Submissions Received from Stakeholders on the Draft Report

MBRI (2012) raised concerns as to the implications to business viability of the Authority's pricing determination particular given the recently announced increases in electricity tariffs and the resulting cost of pumping water.

During Round 2 consultation in January (QCA 2013), stakeholders submitted that HP users have a significantly higher ability to pay for water compared to irrigators who have significant (on-farm) costs.

MBRI (2013d) submitted that affordability is not excluded from the Authority's consideration by the terms of the Ministerial Direction. The Authority should take capacity to pay into account in prices.

Authority's Response to Submissions Received on the Draft Report

The Ministerial Direction requires that if a price increase greater than inflation is required, the price impacts on irrigators are to be moderated.

Capacity to pay studies are problematic irrigators often have different crop combinations and circumstances and it is difficult to forecast commodity prices into the future. Such capacity-to-pay studies invariably involve a judgement as to a mean or median level of affordability which could have serious effects on some customer groupings. Rather than undertake potentially unnecessarily costly and unreliable studies, the Minister requires that price paths be moderated.

Accordingly, the Authority's starting Part A fixed charge is recognition that the Authority has taken into account impacts on irrigators of introducing charges where such charges did not previously apply. The 2013-14 recommended charges are lower than those suggested by Seqwater.

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APPENDIX A: FUTURE RENEWALS LIST

Below are listed Seqwater's forecast renewal expenditure items submitted by Seqwater in June 2012 and formed the basis of the April NSPs, for the years 2013-14 to 2035-36 in 2012-13 dollar terms.

Asset	*Year*	*Description*	*Total ($,000)*
Somerset Dam	2013/14	Refurbish Hydro	20
		Refurbish Spillway Crest	75
		Refurbish Spillway Sluice	75
	2014/15	Refurbish Regulator	20
		Refurbish Spillway Crest	50
		Refurbish Spillway Sluice	50
	2015/16	Refurbish Regulator	60
	2016/17	Refurbish Hydro	20
		Refurbish Spillway Crest	60
		Refurbish Spillway Sluice	60
	2017/18	Refurbish Spillway Crest	60
		Refurbish Spillway Sluice	60
	2018/19	Refurbish Regulator	40
		Refurbish Spillway Crest	40
		Refurbish Sump Pump	25
	2019/20	Refurbish Generator	100
		Refurbish Regulator	80
	2020/21	Refurbish Hydro	10
		Refurbish Town Water	50
	2023/24	Replace Water Infrastructure - Dams - Somerset Dam - Control Room - Switchboard - Distribution Switchboard	80
		Replace Water Infrastructure - Dams - Somerset Dam - Control Room - Switchboard - Main Lv Switchboard	53
		Replace Water Infrastructure - Dams - Somerset Dam - Control Room - Switchboard - Main Switchboard	193
	2025/26	Refurbish Water Infrastructure - Dams - Somerset Dam - Gantry Crane - Gantry Crane - Carriage Structure	150
		Refurbish Water Infrastructure - Dams - Somerset Dam - Gantry Crane - Gantry Crane - Electrical Panels	150
		Replace Water Infrastructure - Dams - Somerset Dam - Gantry Crane - Gantry Crane - 900Mm Dia Sheaves	171
		Replace Water Infrastructure - Dams - Somerset Dam - Gantry Crane - Gantry Crane - Cable Reeler	13
		Replace Water Infrastructure - Dams - Somerset Dam - Gantry Crane - Gantry Crane - Double Drop Sheaves	72
		Replace Water Infrastructure - Dams - Somerset Dam - Gantry Crane - Gantry Crane - Drive Motors	11
		Replace Water Infrastructure - Dams - Somerset Dam - Gantry Crane - Gantry Crane - Slings 100T Swl (Spares)	5
		Replace Water Infrastructure - Dams - Somerset Dam - Gantry Crane - Gantry Crane - Slings 10T Swl (Spares)	1
		Replace Water Infrastructure - Dams - Somerset Dam - Gantry Crane - Gantry Crane - Spare Carriage Wheels	16
		Replace Water Infrastructure - Dams - Somerset Dam - Gantry Crane - Gantry Crane - Steel Superstructure	2,984

Asset	*Year*	*Description*	*Total ($,000)*
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Gate Winches & Gearing -	107
		Replace Water Infrastructure - Dams - Somerset Dam - Inlet Outlet Works - Inlet Screens & Trash Racks - Base Concrete	994
		Replace Water Infrastructure - Dams - Somerset Dam - Inlet Outlet Works - Inlet Screens & Trash Racks - Precast Concrete	2,498
		Replace Water Infrastructure - Dams - Somerset Dam - Inlet Outlet Works - Inlet Screens & Trash Racks - Spares In Sand Blasting Shed For Refurbishment	175
		Replace Water Infrastructure - Dams - Somerset Dam - Inlet Outlet Works - Inlet Screens & Trash Racks - Structural Walls, Colums & Beams	3,251
		Replace Water Infrastructure - Dams - Somerset Dam - Inlet Outlet Works - Inlet Screens & Trash Racks - Trash Screen Fishing Gear	27
		Replace Water Infrastructure - Dams - Somerset Dam - Inlet Outlet Works - Inlet Screens & Trash Racks - Trash Screens	1,399
		Replace Water Infrastructure - Dams - Somerset Dam - Instrumentation (Dam) - Equipment - Compressor	21
		Replace Water Infrastructure - Dams - Somerset Dam - Instrumentation (Dam) - Equipment - Exhaust Fan	27
		Replace Water Infrastructure - Dams - Somerset Dam - Instrumentation (Dam) - Equipment - Sampling Equipment	13
		Replace Water Infrastructure - Dams - Somerset Dam - Instrumentation (Dam) - Equipment - Temperature Sensing System	112
		Replace Water Infrastructure - Dams - Somerset Dam - Instrumentation (Dam) - Gate Controls -	27
		Replace Water Infrastructure - Dams - Somerset Dam - Instrumentation (Dam) - Monitoring - Seismic Monitoring	80
		Replace Water Infrastructure - Dams - Somerset Dam - Instrumentation (Dam) - Monitoring - Water Level Recorder	53
		Replace Water Infrastructure - Dams - Somerset Dam - Instrumentation (Dam) - Piezometer System - Foundation Piezometers	267
		Replace Water Infrastructure - Dams - Somerset Dam - Instrumentation (Dam) - Piezometer System - Lower Gallery Piezometers	267
		Replace Water Infrastructure - Dams - Somerset Dam - Instrumentation (Dam) - Security - Security Alarm	27
		Replace Water Infrastructure - Dams - Somerset Dam - Instrumentation (Dam) - Security - Security Sensor	93
	2026/27	Replace Water Infrastructure - Dams - Somerset Dam - Site Works (Dam) - Power Supply - Light & Power Reticulation	747
		Replace Water Infrastructure - Dams - Somerset Dam - Site Works (Dam) - Power Supply - Load Bank 33 Kva	53
		Replace Water Infrastructure - Dams - Somerset Dam - Site Works (Dam) - Power Supply - Power Supply	2
		Replace Water Infrastructure - Dams - Somerset Dam - Site Works (Dam) - Power Supply - Underground Power Reticulation	34
		Replace Water Infrastructure - Dams - Somerset Dam - Site Works (Dam) - Power Supply - Wiring Works	53
	2032/33	Replace Water Infrastructure - Dams - Somerset Dam - Site Works (Dam) - Fencing And Gates - Beam Creek Fencing	11

Asset	*Year*	*Description*	*Total ($,000)*
		Replace Water Infrastructure - Dams - Somerset Dam - Site Works (Dam) - Fencing And Gates - Brockhurst Fencing	2
		Replace Water Infrastructure - Dams - Somerset Dam - Site Works (Dam) - Fencing And Gates - Fencing Around D/S Toe Of Embankment	240
		Replace Water Infrastructure - Dams - Somerset Dam - Site Works (Dam) - Fencing And Gates - Kirkleigh Boundary Fence	3
		Replace Water Infrastructure - Dams - Somerset Dam - Site Works (Dam) - Fencing And Gates - Villeneuve Road Fence	2
		Replace Water Infrastructure - Dams - Somerset Dam - Site Works (Dam) - Fencing And Gates - Westvale Road Fencing	126
	2035/36	Replace Water Infrastructure - Dams - Somerset Dam - Dam Wall - Gallery - Pipework Inc. Valves	107
		Replace Water Infrastructure - Dams - Somerset Dam - Dam Wall - Gallery - Pumps	32
		Replace Water Infrastructure - Dams - Somerset Dam - Dam Wall - Metal Work - Chain Mesh Walls	11
		Replace Water Infrastructure - Dams - Somerset Dam - Dam Wall - Metal Work - Gates	21
		Replace Water Infrastructure - Dams - Somerset Dam - Dam Wall - Metal Work - Hand Railing	200
		Replace Water Infrastructure - Dams - Somerset Dam - Dam Wall - Service Bridge - Bearings (Service Bridge)	400
		Replace Water Infrastructure - Dams - Somerset Dam - Dam Wall - Service Bridge - Bridge Beams (Steel)	2,552
		Replace Water Infrastructure - Dams - Somerset Dam - Dam Wall - Service Bridge - Bridge Deck (Service Bridge)	1,398
		Replace Water Infrastructure - Dams - Somerset Dam - Dam Wall - Service Bridge - Gantry Track Rails (Service Bridge)	583
		Replace Water Infrastructure - Dams - Somerset Dam - Dam Wall - Services - Compressed Air Delivery System	32
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate I - Concrete	50
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate I - Steelworks	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate J - Concrete	50
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate J - Steelworks	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate K - Concrete	50
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate K - Steelworks	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate L - Concrete	50
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate L - Steelworks	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate M - Concrete	50
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate M - Steelworks	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate N - Concrete	50
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate N - Steelworks	56

Asset	*Year*	*Description*	*Total ($,000)*
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate O - Concrete	50
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate O - Steelworks	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate P - Concrete	50
		Replace Water Infrastructure - Dams - Somerset Dam - Gate Hoisting Mechanisms - Counterweight - Gate P - Steelworks	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate I - Radial Gate	244
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate I - Trunion	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate J - Radial Gate	244
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate J - Trunion	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate K - Radial Gate	244
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate K - Trunion	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate L - Radial Gate	244
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate L - Trunion	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate M - Radial Gate	244
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate M - Trunion	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate N - Radial Gate	244
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate N - Trunion	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate O - Radial Gate	244
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate O - Trunion	56
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate P - Radial Gate	244
		Replace Water Infrastructure - Dams - Somerset Dam - Gates - Gate P - Trunion	56
Water Flow Meters	2025/26	Replace Water Meters (Currently do not exist. Will be installed over next 9 years as part of NWI)	25
	2026/27	Replace Water Meters (Currently do not exist. Will be installed over next 9 years as part of NWI)	25
	2027/28	Replace Water Meters (Currently do not exist. Will be installed over next 9 years as part of NWI)	25
	2028/29	Replace Water Meters (Currently do not exist. Will be installed over next 9 years as part of NWI)	25
	2029/30	Replace Water Meters (Currently do not exist. Will be installed over next 9 years as part of NWI)	25
	2030/31	Replace Water Meters (Currently do not exist. Will be installed over next 9 years as part of NWI)	25
	2031/32	Replace Water Meters (Currently do not exist. Will be installed over next 9 years as part of NWI)	25
	2032/33	Replace Water Meters (Currently do not exist. Will be installed over next 9 years as part of NWI)	25

Asset	*Year*	*Description*	*Total ($,000)*
	2033/34	Replace Water Meters (Currently do not exist. Will be installed over next 9 years as part of NWI)	25
	2034/35	Replace Water Meters (Currently do not exist. Will be installed over next 9 years as part of NWI)	25
	2035/36	Replace Water Meters (Currently do not exist. Will be installed over next 9 years as part of NWI)	25
Wivenhoe Dam	2014/15	Refurbish Water Infrastructure - Dams - Wivenhoe Dam - Inlet/Outlet Works (Dam) - Inlet Screens & Trash Rack - Trash Rack	10
		Refurbish Water Infrastructure -Dams - Wivenhoe Dam - Dam Wall - Zone 4 Riprap	10
		Refurbish Water Infrastructure -Dams - Wivenhoe Dam - Inlet/Outlet Works (Dam) - Baulk Winch	100
	2015/16	Refurbish Water Infrastructure - Dams - Wivenhoe Dam - Inlet/Outlet Works (Dam) - Inlet Screens & Trash Rack - Trash Rack	80
		Refurbish Water Infrastructure - Dams - Wivenhoe Dam - Inlet/Outlet Works (Dam) - Penstock Baulk Winch - Hoist Winch 1	15
		Refurbish Water Infrastructure - Dams - Wivenhoe Dam - Spillway - Spillway Gates	100
	2016/17	Refurbish Water Infrastructure -Dams - Wivenhoe Dam - Inlet/Outlet Works (Dam) - Regulator Valves	35
	2019/20	Refurbish Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Standby Generator - Engine Cooling System	35
		Refurbish Water Infrastructure - Dams - Wivenhoe Dam - Inlet/Outlet Works (Dam) - Inlet Screens & Trash Rack - Trash Screen Fishing Gear	10
	2020/21	Replace Water Infrastructure -Dams - Wivenhoe Dam - Site Works (Dam) - Roads And Drainage	339
	2020/21	Replace Water Infrastructure -Dams - Wivenhoe Dam - Site Works (Dam) - Site Signage	88
	2035/36	Replace Water Infrastructure -Dams - Wivenhoe Dam - Site Works (Dam) - Site Signage	88
	2021/22	Refurbish Water Infrastructure - Dams - Wivenhoe Dam - Inlet/Outlet Works (Dam) - Inlet Screens & Trash Rack - Trash Rack	30
		Refurbish Water Infrastructure -Dams - Wivenhoe Dam - Inlet/Outlet Works (Dam) - Intake Baulks	12
	2025/26	Replace Water Infrastructure - Dams - Wivenhoe Dam - Spillway - Gate Hoisting Mechanisms - Cables & Sheaving - Gate 1	30
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Spillway - Gate Hoisting Mechanisms - Cables & Sheaving - Gate 2	30
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Spillway - Gate Hoisting Mechanisms - Cables & Sheaving - Gate 3	30
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Spillway - Gate Hoisting Mechanisms - Cables & Sheaving - Gate 4	30
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Spillway - Gate Hoisting Mechanisms - Cables & Sheaving - Gate 5	30

Asset	*Year*	*Description*	*Total ($,000)*
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Spillway - Gate Hoisting Mechanisms - Winch 1A &1B Gate 1	684
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Spillway - Gate Hoisting Mechanisms - Winch 2A &2B Gate 2	684
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Spillway - Gate Hoisting Mechanisms - Winch 3A &3B Gate 3	684
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Spillway - Gate Hoisting Mechanisms - Winch 4A &4B Gate 4	684
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Spillway - Gate Hoisting Mechanisms - Winch 5A &5B Gate 5	684
	2027/28	Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Standby Generator - Emergency Ventilation Damper	41
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Standby Generator - Fire Suppression System	41
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Standby Generator - Generator Set Controls	68
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Standby Generator - Ups Battery Charger	22
	2029/30	Replace Water Infrastructure - Dams - Wivenhoe Dam - Instrumentation (Dam) - Monitoring - Seismic Monitoring	1,642
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Instrumentation (Dam) - Monitoring - Water Quality Monitoring	173
	2030/31	Replace Water Infrastructure - Dams - Wivenhoe Dam - Instrumentation (Dam) - Seepage V Notch Weirs - V Notch Weir Large	10
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Instrumentation (Dam) - Surface Movement Points - Surface Settlement Points	8
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Communication Systems - Mobile Phone	4
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Communication Systems - Pa System	3
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Communication Systems - Radio	11
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Communication Systems - Telephone	59
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Water & Fire Services - Fire Indicator Panel	11
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Water & Fire Services - Fire Services (Lwtic)	224
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Water & Fire Services - Fire Suppression & Alarm System	30
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Water & Fire Services - Fire Suppression System	328

Asset	*Year*	*Description*	*Total ($,000)*
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Water & Fire Services - Fire Suppression System 2	104
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Water & Fire Services - Logan Camp Water Reservoir & Tank	189
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Water & Fire Services - Ser - Water Services	4
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Water & Fire Services - Tank (Teampoly 1085L 4 Module)	3
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Water & Fire Services - Water Meters (Lwtic)	9
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Water & Fire Services - Water Plant	378
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Water & Fire Services - Water Services (Water Line To Picnic Sheds)	8
		Replace Water Infrastructure -Dams - Wivenhoe Dam - Instrumentation (Dam) - Gate Controls	27
		Replace Water Infrastructure -Dams - Wivenhoe Dam - Instrumentation (Dam) - Piezometers	350
	2031/32	Replace Water Infrastructure -Dams - Wivenhoe Dam - Instrumentation (Dam) - Telemetry	282
	2032/33	Replace Water Infrastructure - Dams - Wivenhoe Dam - Instrumentation (Dam) - Equipment - Laboratory Equipment	86
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Instrumentation (Dam) - Equipment - Sampling Equipment	269
	2034/35	Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Other Mechanical - Air Compressor	11
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Other Mechanical - Hydraulic Lines	903
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Other Mechanical - Hydraulic Pack	1,505
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Other Mechanical - Mechanical Spares	11
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Other Mechanical - Oil Transfer Pump	3
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Other Mechanical - Portable Hydraulic Power Unit	82
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Other Mechanical - Pump	205
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Other Mechanical - Spill Equipment	33
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Control Building (Dam) - Other Mechanical - Ventilation Plant	14
	2035/36	Replace Water Infrastructure - Dams - Wivenhoe Dam - Instrumentation (Dam) - Water Level Recorder - Water Level Recorder	7
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Saddle Dam 1 - Road Pavement - Gravel	39
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Saddle Dam 2 - Road Pavement - Gravel	51

Asset	*Year*	*Description*	*Total ($,000)*
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Power Supply - Alterations To Hv Reticulation	55
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Power Supply - Auto Dialler	12
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Power Supply - Circuit Breaker (Transformer)	16
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Power Supply - Electrical Cabinet	11
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Power Supply - Electrical Spares	27
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Power Supply - High Voltage Power Reticulation	1368
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Power Supply - High Voltage Switch Gear	958
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Power Supply - Light & Power Reticulation	438
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Power Supply - Ring Main Unit	207
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Power Supply - Transformer (300Kva, Dry Type)	82
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Power Supply - Ups(25Kva)	6
		Replace Water Infrastructure - Dams - Wivenhoe Dam - Site Works (Dam) - Power Supply - Wivenhoe Admin Centre Generator	55
		Replace Water Infrastructure -Dams - Wivenhoe Dam - Inlet/Outlet Works (Dam) - Gate Seals	379
		Replace Water Infrastructure -Dams - Wivenhoe Dam - Site Works (Dam) - Fencing And Gates	215
Total			**40,023**