QUEENSLAND COMPETITION AUTHORITY

Final Report

Seqwater Irrigation Price Review 2013-17

Volume 2

Central Lockyer Valley Water Supply Scheme

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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 Lockyer Valley WSS for 2013-17 are outlined in Table 1 together with actual prices since 1 July 2006.

Table 1: Prices for Central Lockyer Valley WSS (Nominal $/ML)

Tariff Group	*Past Prices*							*Recommended Prices*			
	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Central Lockyer Valley											
Fixed (Part A)*	0.00*	2.92*	5.84*	8.87*	11.79*	12.21*	12.37*	0.00	0.00	0.00	26.43
Volumetric (Part B)	27.36	28.16	29.51	30.44	31.35	32.48	32.90	9.89	10.13	10.39	10.65
Central Lockyer Valley – Morton Vale Bulk Charges											
Fixed (Part A)*								18.55	21.06	23.69	26.43
Volumetric (Part B)								4.94	5.06	5.19	5.32
Morton Vale Pipeline (Unbundled)											
Fixed (Part C)	-	-	-	-	-	-	-	8.91	9.14	9.36	9.60
Volumetric (Part D)	-	-	-	-	-	-	-	8.17	8.37	8.58	8.79
Morton Vale Pipeline (Bundled)											
Fixed (Part A+C)	14.60	15.96	17.76	19.38	20.94	21.69	21.98	27.46	30.20	33.05	36.03
Volumetric (Part B+D)	24.99	27.39	30.47	33.23	35.90	37.19	37.68	13.10	13.43	13.77	14.11

Source: Seqwater (2012), QCA (2012) and QCA (2013). Note: The Part A charges do not apply from 2006-07 to 2015-16 as individual irrigator nominal IWA or WAE have not been issued.*

Although the Morton Vale Pipeline contract still has effect, the Authority has recommended termination fees that would apply for 2013-17, if the contract were to be renegotiated (Table 2).

Table 2: Termination Fees for Morton Vale Pipeline (Nominal $/ML)

Tariff Group	*Termination Fee*			
	2013-14	*2014-15*	*2015-16*	*2016-17*
Morton Vale Pipeline	104.94	107.58	110.33	113.08

Source: QCA (2013).

In the Central Lockyer Valley WSS, cost-reflective volumetric charges are lower when compared to 2012-13. To maintain revenues, the balance not recouped by volumetric charges is recovered by fixed charges which are higher when they are reintroduced in 2016-17. In Morton Vale Pipeline, the volumetric charge is lower and the fixed charge higher when compared to 2012-13. As current revenues are below cost-reflective revenues, the Authority recommends price paths 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 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 LOCKYER VALLEY WATER SUPPLY SCHEME

1.1 Scheme Description

The Central Lockyer Valley WSS is located near the town of Gatton in South East Queensland (SEQ).

The scheme supplies water for the Morton Vale Pipeline, recharges the groundwater areas adjacent to Lockyer Creek, and supplies downstream area-based surface-water entitlements.

The scheme is located in the Clarendon Sub-artesian Area which is a benefitted groundwater area, with irrigators metered and charged for groundwater use.

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

Table 1.1: Overview of Central Lockyer Valley WSS

	Central Lockyer Valley WSS
Business Centre	Gatton
Irrigation Uses	Agriculture (dairy, vegetable and forage crops)
Urban Water Supplies	Laidley Golf Club

Source: Seqwater (2012am).

The Central Lockyer Valley WSS supplies water to two tariff groups, identified as:

(a) the Central Lockyer Valley tariff group which includes customers who have: medium priority (MP) Risk A and Risk B priority surface-water entitlements (205 customers); bore licences within the benefited groundwater areas (113 customers); Laidley Golf Club; Crowley Vale Water Board; one non-riparian stock and domestic user; and Seqwater; and

(b) the Morton Vale Pipeline tariff group which includes another 51 irrigation entitlement holders supplied from the Morton Vale Pipeline.

As the Moreton Resource Operations Plan (ROP) has yet to be amended to include this WSS, the scheme is regulated under an Interim Resource Operations Licence (IROL).

The IROL includes the scheme interim water allocations (IWAs) (also referred to as water access entitlements (WAE) in this report). These IWAs are as identified in Table 1.2.

Table 1.2: Summary of WAE - Central Lockyer Valley and Morton Vale Pipeline

IWA	*User/customer*	*No of customers*	*MP Volume (ML)*	*HP Volume (ML)*	*Comment*
Surface Water – Morton Vale Pipeline	Irrigators	51	3,470		Customer contracts in place
Surface Water – Central Lockyer Risk A and Risk B MP	Irrigators	205	3,115		No volumes attributed to individual customers
Ground Water – Central Lockyer	Irrigators	113	9,335		No volumes attributed to individual customers
Risk A (MP)	Crowley Vale Water Board - Irrigation	1	325		
Risk A (MP)	Stock and domestic	1	10		
Risk A (MP)	Laidley Golf Club	1	60		
Distribution losses	Seqwater			184	Held by Seqwater for Morton Vale Pipeline
Total			**16,315**	**184**	

Source: Seqwater (2012am).

While some allocation is defined as Risk A or Risk B, these allocations are a form of MP allocation. The only high priority (HP) WAE in the scheme relates to distribution losses held by Seqwater for Morton Vale Pipeline.

Of the major categories, IWA described as "Details of Other Existing Water Supply Responsibilities" are recognised in the IROL as three separate types as follows:

(a) 3,470 ML of MP surface water WAE with customer volumes attached have been attributed to the 51 users on the Morton Vale Pipeline. The individual volumes are specified in contracts and customers pay Part A charges;

(b) 3,115 ML of MP Risk A and Risk B surface water WAE. The IROL states these are expected to be the same in terms of supply reliability. No customer volumes are attributed to these individual licences. Instead, these WAE are area-based licences and nominal volumes are yet to be defined for individual landholders. In accordance with the 2006 SunWater review, no Part A charges are applied; and

(c) 9,335ML of MP groundwater WAE. As in (b) above, no customer volumes are attributed to these individual licences. Accordingly, these WAE holders do not currently pay Part A charges.

Irrigation and total (all sectors) WAE are summarised by priority group in Table 1.3. The volume of irrigation WAE is 16,245ML of MP (or equivalent), including Crowley Vale Water Board (CVWB). The Authority has also reviewed the 184ML of HP loss WAE.

The only other non-irrigation users in the scheme are the Laidley Golf Club Inc. (LGC) (60ML) and stock and domestic users (70ML). The latter explains the 70ML difference between total WAE and irrigation WAE in Table 1.3.

Table 1.3: Water Access Entitlements

Customer Group	*Irrigation WAE (ML)**	*Total WAE (ML)*
Risk A, B and Medium Priority	16,245	16,315
High Priority	0	184
Total	**16,245**	**16,499**

Source: Seqwater (2012am). Note: Irrigation total includes CVWB WAE (325ML), but excludes LGC (60 ML) and non-riparian stock and domestic users (10 ML) as Crowley Vale is an irrigation customer, whereas the others are non-agricultural uses.*

Submissions Received from Stakeholders on the Draft Report

DNRM (2013a) submitted that there were some errors in the Draft Report, namely:

(a) the Clarendon sub-artesian area has not existed since 2007 when it became known as Implementation Area 1 of the Lockyer Valley groundwater management area;

(b) a discrepancy between total WAE (16,499ML) in Table 1.3 (above) and Table 4.3 and Table 4.4 (16,541ML) in Volume 1: Chapter 4 – Pricing Framework;

(c) only surface water in the Central Lockyer Valley WSS is in the form of IWA;

(d) the correct numbers of entitlements are: 151 licences for taking supplemented groundwater, 116 area-based IWAs for taking surface water and 51 contract holders in the Morton Vale Pipeline that do not have individual water entitlements; and

(e) the only HP is 184ML for Morton Vale Pipeline distribution losses.

Stakeholders also commented on the volume of WAE in Morton Vale Pipeline that should be used for cost allocation purposes. Comments and discussion are included in Chapter 6.

Authority's Response to Submissions Received on the Draft Report

The Authority sourced all Volume 2 Draft Report information from Seqwater's November 2012 Network Service Plan (NSP). In response to issues raised by DNRM:

(a) Seqwater's NSP submitted that the scheme is located in the Clarendon Sub-artesian Area which constitutes a benefitted groundwater area (p.4);

(b) Seqwater's NSP defined a total of 16,499ML of total nominal WAE (p.12). The Authority notes this is in contrast to 16,541ML of total nominal WAE outlined in Seqwater's April 2012 NSP and IROL. For the purposes of cost allocation (and establishing Final Report prices) the Authority adopted the figure of 16,499ML as the

42ML discrepancy represents WAE that has been relinquished or not accounted for, and Seqwater no longer holds;

(c) although the NSP is silent on whether entitlements constitute IWA, Pages 33 and 34 of the IROL describe all entitlements as IWA. While there is a total IWA for Morton Vale Pipeline, individual volumes are defined in contracts;

(d) the Authority accepted Seqwater's details regarding numbers (and ownership) of entitlements (pp.11-12) which is consistent with Table 1.2 (outlined above). Revised estimates from DNRM are noted for reference but have no implications for the Authority's review; and

(e) the Authority agrees that the only HP (loss) WAE is for Morton Vale Pipeline.

1.2 Bulk and Distribution Water Infrastructure

Bulk Assets

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 full supply storage capacity and age of the key infrastructure are detailed in Table 1.4.

Table 1.4: Bulk Water Infrastructure in the Central Lockyer Valley WSS

Storage Infrastructure	*Capacity (ML)*	*Age (years) **
Bill Gunn Dam (Lake Dyer)	6,950	24
Clarendon Dam (Lake Clarendon)	24,300	20
Kentville Weir	480	n.a-
Jordan I Weir	456	n.a
Jordan II Weir	30	n.a
Wilson Weir	234	n.a
Clarendon Weir	233	n.a
Glenore Grove Weir	339	n.a
Laidley Creek Diversion Weir	44	n.a
Showgrounds Weir	24	n.a
Crowley Vale Weir	8	n.a

Source: Seqwater (2012am). Note If an age is not provided, construction occurred 1940-1990 (Seqwater 2012am).*

The characteristics of the main water assets are:

(a) Bill Gunn Dam (Lake Dyer) – dam/off-stream storage, zoned earth embankment; and

(b) Clarendon Dam (Lake Clarendon) – dam/off-stream storage, zoned earth embankment.

Other bulk assets include gauging stations, Clarendon diversion channels, the Redbank Creek and Clarendon pump stations.

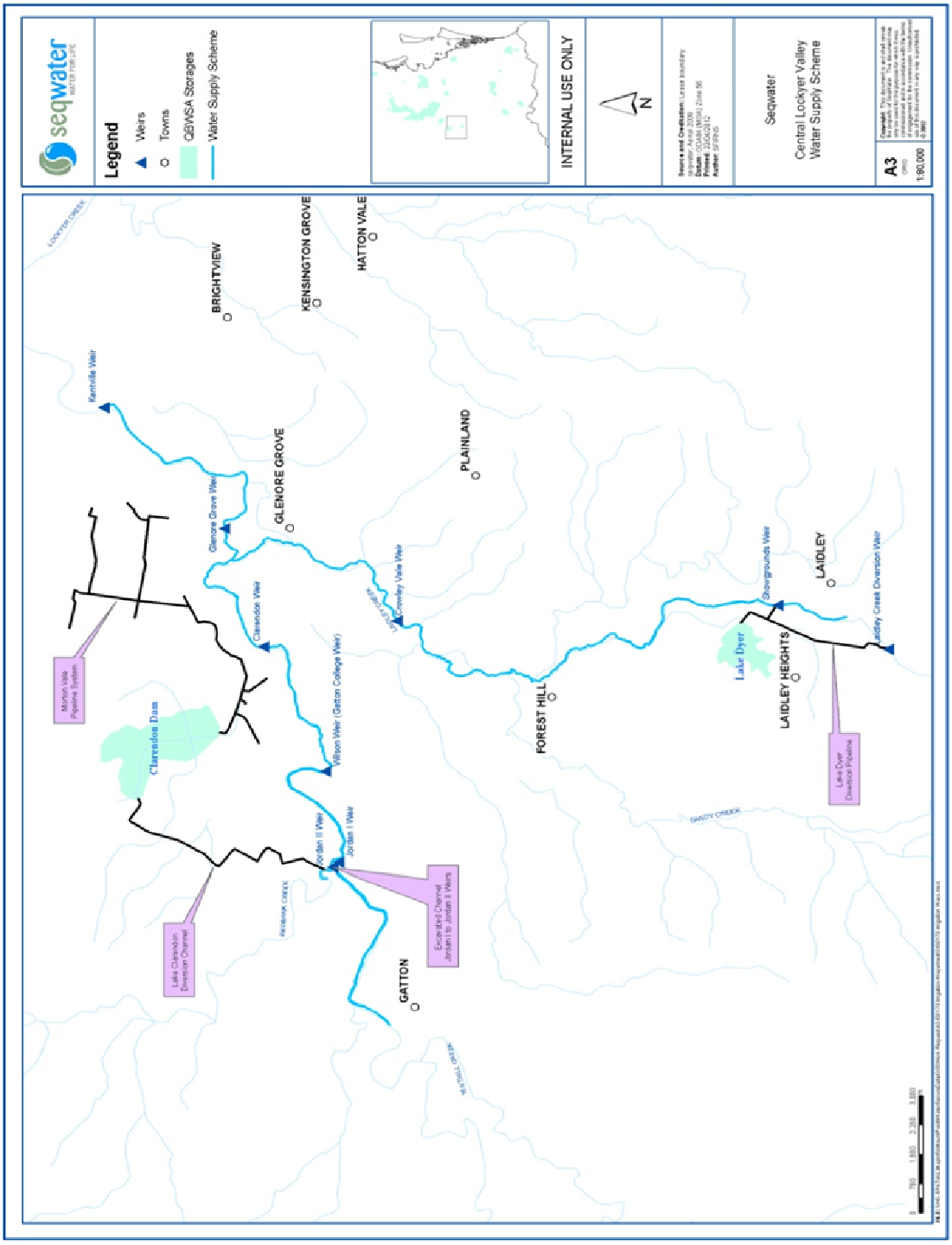
Further details of bulk water assets are contained in the NSP (Seqwater 2012am).

Distribution Assets

The scheme includes the Morton Vale Pipeline, which is a 1200 mm diameter, reinforced concrete, gravity-fed pipeline delivering water from Lake Clarendon Dam to customers of the Morton Vale Pipeline tariff group.

The location of Central Lockyer Valley WSS and key infrastructure are shown in Figure 1.1.

Figure 1.1: Central Lockyer Valley WSS Locality Map



Source: Seqwater (2012am).

1.3 Network Service Plans

The Central Lockyer Valley WSS network service plan (NSP) presents Seqwater's:

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

(b) risks relevant to the NSP; and

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

No customer service targets have been documented for this scheme.

Seqwater 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 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.

Submissions Received from Stakeholders on the Draft Report

G. and D. Van der Est (2013) submitted that the Authority has not consulted extensively, as there was only one irrigator from the Central Lockyer Valley tariff group in attendance during [initial] Round 1consultation (refer below).

Authority's Response to Submissions Received on the Draft Report

The Authority held 3 rounds of consultation with stakeholders:

(a) Round 1 consultation provided irrigators an overview of the purpose and timelines of the review (held at Gatton RSL, 25 June 2012);

(b) Round 2 consultation provided irrigators an overview of the Authority's Draft Report findings (held at Gatton Research Station, 23 January 2013); and

(c) Round 3 provided stakeholders an overview of proposed changes to the Draft Report prior to the Final Report (held at Gatton RSL, 5 March 2013).

Submissions have been received from irrigators of the Central Lockyer Valley WSS and the Queensland Farmers Federation (QFF). The Authority's responses are documented throughout this and the Volume 1 Final Report.

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.

During the negotiations that preceded the 2006-11 price path, the Central Lockyer Valley WSS Tier 2 group chose to retain the existing price cap arrangement for both the Central Lockyer Valley and Morton Vale Pipeline systems. The Tier 2 group also opted to take up a drought tariff option for the Morton Vale Pipeline tariff group. In the 2011-13 interim price period, the price cap arrangement was continued.

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 (refer 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 regard to risks related to managing water and costs, Seqwater submitted that, (and as noted in Chapter 1), there are various forms of WAE in place in the Central Lockyer Valley WSS. These include:

(a) IWAs with customer volumes attached for CVWB, LGC and stock and domestic users, to which Part A (fixed) charges apply;

(b) IWAs with MP customer volumes attached in the Morton Vale Pipeline, to which Part A charges currently apply;

(c) IWAs for surface water, area-based licences to which no customer volumes are attached and no Part A charges apply; and

(d) IWAs for MP groundwater users to which no customer volumes are attached and no Part A charges apply.

[The Authority's investigation applies to all IWAs noted above, except for the LGC and stock and domestic users.]

Seqwater noted that it bears volume risk in the Central Lockyer Valley tariff group as nominal individual customer volumes are not assigned to all customers. Seqwater advised that current prices were set based on the assumption that a ROP would be finalised for the system, and that irrigators would be issued with permanent entitlements for their Risk A, Risk B and all MP WAE. However Seqwater has not recovered any Part A tariff revenue from holders of Risk A, Risk B and some MP WAE. Seqwater submitted it had foregone $152,000 in 2011-12 unrecovered Part A tariff revenue.

Seqwater submitted that this is an untenable situation, and that if an alternative tariff structure is not implemented for the 2013-17 regulatory period, Seqwater will fail to recover lower bound costs.

The current CSO agreement, established between SunWater and the then Department of Environment and Resource Management (DERM), did not take into account the lost revenue (i.e. the CSO was established assuming that customer volumes would be known by 2007-08 and that the Part A charges would be applied to all WAE).

Seqwater submitted that a volumetric only charge should be set to recover total costs, based on an assumed level of water use. To ensure that Seqwater is not exposed to short term volume risk if actual water use is less than forecast, a revenue cap should apply to this tariff group. An adjustment should be made at the start of the next regulatory period to adjust for any identified under- or over-recovery of revenues.

If individual customer volumes are specified [by the Department of Natural Resources and Mines (DNRM)] during the regulatory period, then fixed charges should apply from the start of the following year.

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 2012am).

Other Stakeholders

QFF (2012) submitted that Central Lockyer Valley WSS is a special case as DNRM are yet to assess [and issue] individual customer WAE, so there is not sufficient basis to apply a fixed charge.

Moreover, QFF (2012) and Brimblecombe (2012) noted that Seqwater has proposed a [volumetric] tariff to recover total fixed and variable costs, whereas during 2006-12, customers have not had to pay fixed charges. That is, water planning has not kept pace with water pricing reforms, and fixed costs should only be passed on when tradeable entitlements [water allocations] have been adequately assessed and implemented in the Central Lockyer Valley WSS and there is some opportunity to transfer water if only within defined areas.

QFF (2012) further submitted that if Seqwater's proposal or any alternative proposed by the Authority are to be considered then the impact of the proposed changes on customers should be fully investigated, including capacity to pay.

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 proposed 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) system 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).

Drought Tariff

In the 2006-11 price path, a 'drought tariff' arrangement applied in the Morton Vale Pipeline tariff group. Under this arrangement, the fixed Part A charge decreased when water availability (as measured by the announced allocation) was low and increased when water availability was high. Any variance between actual revenue received and the revenue target was to be carried forward to the next price path – that is, a revenue cap form of price control applied.

Since Seqwater took over from SunWater (1 July 2008) the drought tariff has not applied. Seqwater advised that it has insufficient past data to calculate the extent of under- or over-recovery arising from the application of the price cap arrangements during the current price paths.

The Authority therefore proposed no retrospective adjustments for drought tariff revenues, in the absence of relevant data.

Central Lockyer Valley Tradeable WAE

Draft Report

For Central Lockyer Valley, some IWAs are allocated to individual customers and can be temporarily traded. Some are not allocated to individuals and cannot be traded.

Under current arrangements with IWAs in place, temporary transfers have been limited. The volumes of temporary water traded for the Central Lockyer Valley WSS are identified in Table 2.2, and are immaterial.

Table 2.2: Volume of Water Traded in Central Lockyer Valley WSS (ML)

	2008-09	*2009-10*	*2010-11*	*2011-12*
Temporary	0	6	0	0

Source: Seqwater (2012am).

The absence of permanent trading means that risks are less able to be ameliorated by irrigators or by Seqwater as there are limitations to their ability to sell water to other parties (that is, total risks are higher). To allow customers and Seqwater to better manage demand risk, the Authority considered that permanently tradeable water allocations should be in place for every Seqwater irrigation customer.

For this purpose, the Authority recommended that relevant ROPs (or sections of ROPs) be amended and permanent water allocations be issued in the balance of Seqwater's irrigation WSSs by 30 June 2015.

Such an arrangement will also allow water (WAE) to be directed to highest and best uses over time (through trading) and is consistent with recommendations to this effect at the previous (2005-06) Tier 1 and Tier 2 (SunWater Irrigation) price review.

In the absence of individual customer nominal volumes, the cost-reflective fixed charge in the Central Lockyer Valley WSS should be estimated on the basis of total ML allocated to the scheme and no fixed charge should apply until customer nominal volumes are in place.

Submissions Received from Stakeholders on the Draft Report

In Round 2 consultations (QCA 2013) irrigators supported the Authority's recommendations that DNRM introduce permanent trading by 30 June 2015.

Seqwater (2013a) supported the Authority's recommendation but questioned whether it can be realistically achieved [for this WSS] in the timeframe.

In response to the Authority's draft recommendation, DNRM (2013) submitted that it cannot issue permanently tradeable WAE in the Central Lockyer Valley WSS by 30 June 2015 as:

(a) the scheme is complex, with a combination of water licences for groundwater, area based IWAs for surface water and contract holders on the in the Morton Vale Pipeline;

(b) the supplemented groundwater part of the WSS has no Water Allocation Security Objective (WASO), so the Moreton Water Resource Plan (WRP) would need to be amended; and

(c) the introduction of permanently tradeable WAE is usually driven by the need for trading. Currently, water use is very low and no demand for trading currently exists.

Instead of introducing permanently tradeable WAE in the Central Lockyer Valley WSS by 30 June 2015, DNRM submitted that it will issue individual customer IWA by June 2017. DNRM stated this timing has the advantages of leaving open the option to convert to permanently tradable water allocations when it is deemed necessary, establishing a volume for each entitlement that could be used as a basis for the establishment of Part A charges, and allowing seasonal assignment / temporary water trading.

Factors affecting the timing include the need for consultation with irrigators and limited departmental resources. DNRM also submitted that there are more significant water planning priorities in the Burdekin and Pioneer.

QFF (2013b) and Central Lockyer Valley WSS representatives (2013) were concerned that the two year timeframe for DNRM to implement tradeable WAE will now mean that groundwater planning will be rushed. DNRM may only have time to implement IWAs that are not tradeable or are restricted in trading. The representatives recommended that DNRM consult with customers on the forthcoming water planning processes.

As a consequence QFF and the representatives recommended:

(a) DNRM consult to ensure issues raised by irrigators in the context of water planning, are adequately addressed;

(b) if fixed tariffs are not introduced by 30 June 2015 for the Central Lockyer Valley tariff group, the Authority is to review the imposition of fixed tariffs;

(c) if the Moreton ROP is not amended by 30 June 2015 to include Morton Vale Pipeline, no fixed tariffs and capital charges are to apply;

(d) Government require DNRM, DEWS and Seqwater to engage with irrigators to develop a coordinated plan for the implementation of water planning and pricing reforms (for both tariff groups);

(e) the Authority determine whether Lake Clarendon and associated assets are in excess of what is required to operate the scheme – that is, the Authority to undertake an assessment to determine the optimised cost of scheme assets; and

(f) socio-economic assessments be commissioned by DNRW, relating to water planning arrangements for both tariff groups, to identify measures (such as trading) for faming enterprises to adjust to the Authority's forecast prices / cost-recovery targets.

The representatives also noted that Bill Gunn Dam and Lake Clarendon have performed well below planned supply levels since commissioning. A risk to customers is that the performance of scheme assets will not improve even if measures are taken to limit supply to sustainable yields.

Authority's Response to Submissions Received on the Draft Report

The Authority considers that the DNRM case for delaying the process of implementing permanently tradable WAE are reasonable so some extent, given DNRM's resourcing constraints and competing priorities.

However, the Authority maintains that the timely establishment of permanently tradeable water allocations would (eventually) deliver significant benefits to the Central Lockyer Valley WSS and surrounds (for example, movement of WAE to higher value agricultural production) and should become a DNRM priority. Four years is too long, given past delays.

The Authority considers, therefore, that:

(a) complexity alone should not impede establishing permanently tradeable WAE. The Authority notes that in 2005-06, the then Government approved a price path based on customer WAE being issued by 30 June 2007;

(b) the requirement to amend the Moreton WRP should not be an impediment to issuing permanently tradable WAE. The Authority understands that WRPs are reviewed from time to time (e.g. three reprints have been issued since 2007); and

(c) low water use does not necessarily indicate an absence of demand for trading. It may instead indicate that many WAE holders are not active users, and would sell their WAE if a Part A charge applied and that other (high) water users are constrained in their use by a limit on the number of WAE they can acquire. The current arrangements do not enable customers to sell and buy WAE and likely is partly responsible for current low levels of water use.

A further deferral of the planning processes by DNRM will mean that irrigators seeking to increase production will not be able to buy additional WAE via temporary or permanent trading until 30 June 2017 (and then only temporary trading may be available under DNRM's proposal). To enable such trading would support Government's objective to double agricultural output by 2040.

Acknowledging that priorities should focus on areas of greatest benefit to the State and accepting that additional time is needed to that specified in the Draft Report, the Authority now recommends that individual IWA be issued by 30 June 2016 (three years from commencement of the regulatory period). From this point, fixed charges could apply.

Moreover, the Authority recommends that permanently tradable WAE be established in the Central Lockyer Valley WSS by 30 June 2017 (one year later).

The Authority notes that continuing to defer the establishment of individual customer volumes in the Central Lockyer Valley WSS results in Seqwater continuing to forego Part A revenue, under the Authority's recommended prices. This amounts to approximately $220,000 in 2015-16 or more than $1 million revenue every five years that this is delayed. In the Central Lockyer Valley WSS, this implies an increased community service obligation (CSO) payable by Government, to Seqwater, until DNRM finalises the recommended planning processes and issues individual customer WAE.

The Authority agrees with Central Lockyer Valley WSS representatives that irrigators be consulted as part of the process. In response to issues raised by QFF:

(a) the timing and extent of DNRM consultation with stakeholders in the context of water planning is a matter to be raised directly with Government;

(b) the Authority proposes that once individual customer WAE are issued by DNRM (recommended by 30 June 2016) fixed charges could apply in Central Lockyer Valley tariff group from 1 July 2016 (the final year of the regulatory period);

(c) the Authority recommends that bulk fixed (Part A) charges are to apply to the Morton Vale Pipeline tariff group only, for the duration of the 2013-17 price path;

(d) requiring DNRM, DEWS and Seqwater to engage with irrigators to coordinate the implementation of water planning and pricing reforms is a matter for Government;

(e) any Authority involvement in such analysis is at the discretion of Government;

(f) the Authority undertaking an assessment of the optimised cost of scheme assets is outside the scope of the Ministerial Direction. Any such assessment would be subject to a new Ministerial Direction and, therefore, is a matter for Government; and

(g) up-dating previously undertaken socio-economic research to include measures for farming enterprises to adjust to cost-reflective prices is a matter for DNRM to progress in consultation with stakeholders.

In response to issues raised about the performance of Bill Gunn Dam, it is noted that this is beyond the scope of the pricing review. Such water planning issues are for DNRM to address, preferably as part of the proposed regulatory framework amendments by 2016.

Allocation of Fixed Costs Under Current Arrangements

Draft Report

In Volume 1, the Authority recommended that fixed costs should be allocated to customers on the basis of nominal WAE if headworks utilisation factors (HUFs) do not apply.

For Central Lockyer Valley WSS, there are no WAE identified for most irrigators and, therefore, there is no estimate of the capacity to which each irrigator is entitled. In their absence, it is not possible to assign fixed costs to individual irrigators. The Authority considered several options:

(a) Seqwater's preferred option which is to apply a revenue cap and then use the volumetric charge to recoup all fixed and variable costs. This would see volumetric charges increase from about $30/ML to around $300/ML;

(b) basing the fixed costs on estimates of irrigable land. No such estimates are available;

(c) basing the fixed costs on estimates of total land holding. The ratio of irrigable land to total land holding is variable for many irrigators (and adjustments for each individual for this purpose would be administratively costly); and

(d) estimating the fixed charge on the basis of MLs allocated to the WSS. This would represent the charge per ML that would apply if the tradable WAE were in place. In the absence of MLs of WAE allocated to individual irrigators, Seqwater would have to forego this revenue until the WAE are put in place. This option is similar to what has effectively occurred 2006-12, which cost Seqwater $152,000 in 2011-12.

Option (d) would only represent a small portion of the CSO and would minimise price changes once WAE are put in place. The Authority proposed to proceed on this basis.

The Authority's recommended approach of option (d), addresses QFF's comment that fixed charges should only be passed on when individual WAEs are determined.

Submissions Received from Stakeholders on the Draft Report

Seqwater (2013a) required an assurance that the fixed charges not applied will be recoverable through a CSO agreement. Seqwater noted that the Authority's Draft Report estimated the MP share of the fixed revenue requirement to be $952,000 for 2013-14.

DNRM (2013a) submitted that customers in the Central Lockyer Valley WSS were, up to 30 June 2013, required to pay a minimum charge regardless of water usage, equivalent to $258 per year. DNRM suggested that 74% of irrigators paid according to the minimum charge, so that if the Part A charge was set to zero from 2013-14, many irrigators who used no water would pay no charges at all and others would pay less than currently.

Authority's Response to Submissions Received on the Draft Report

Since the Draft Report, the Authority has revised its recommendation and is now recommending that individual IWAs be put in place by 30 June 2016.

The Authority cannot provide assurance that a CSO will be provided by Government to cover the fixed revenue requirement. The amount of $952,000 was the Authority's Draft Report estimate of efficient fixed costs and is subject to revision for the Final Report. Because of the change to proposed tariff structures, the required CSO amount is likely to be higher than that currently being provided to cover the existing revenue shortfall. However, this remains a matter for Seqwater and Government.

Seqwater has proposed (and the Authority agrees) that minimum charge arrangements no longer apply. Once the recommended revised tariff structures are in place, there is no basis for minimum charges as the recommended fixed charges should ensure that the balance of required fixed costs will be covered.

Distribution Losses

Long term volume risks are primarily associated with augmenting current infrastructure or reducing distribution losses to address future water supply needs. If Seqwater can demonstrate to Government that it has permanently reduced the amount of distribution losses, then loss WAEs can, under certain conditions be sold, increasing the WAE available to customers from the bulk WSS. Due to the limited distribution loss WAEs in Seqwater irrigation schemes, the Authority recognised that this only gives Seqwater a limited ability to respond to higher demand.

In the Morton Vale Pipeline, Seqwater holds a small volume of HP distribution loss WAE (in the form of an IWA) which cannot be permanently traded. Therefore, Seqwater cannot currently respond to higher demand (for example) through selling loss WAE. This is the case, at least, until these WAE become tradeable water allocations (as recommended by the Authority). In any case, the volume (184ML) is not material enough to provide significant long term volume risk management options, but once it has been reviewed as part of DNRM's amendment to the ROP, it may (if converted to another purpose and sold) reduce the cost-reflective prices by allocating fixed costs over an increased volume of nominal customer WAE (reducing per ML fixed tariffs).

Thus, the Authority recommended that DNRM determine the required efficient volume of distribution loss WAE in this WSS, for the Morton Vale Pipeline, by 30 June 2015. Details are provided in Chapter 3.

2.3 Morton Vale Pipeline Contract

Draft Report

Stakeholder Submissions

The QFF (2012) noted that Morton Vale Pipeline customers hold separate contracts which were executed around 1995 with the Primary Industries Corporation. The contract covers a nominal allocation [nominal WAE] for each customer, a capital charge over a 30-year term, payment for the take of water from Lake Clarendon and an early termination fee.

QFF (2012) expressed concern about the terms and conditions relating to the Morton Vale Pipeline Contract. The imposition of any charges (waived during the current price path) could have an impact on customers' capacity to pay the Authority's recommended charges.

During the Authority's Round 1 consultations in June 2012 (QCA 2012c), irrigators noted that specifications on water licences are likely to vary from property to property depending on their location and when they were issued.

Irrigators also noted that some Morton Vale Pipeline irrigators surrendered their IWAs and sold their properties. It is not clear that new owners can access water, in the absence of trading. In some cases, their access [physical works] to the Morton Vale Pipeline has been removed by the service provider [previously SunWater].

Authority's Analysis

In regard to the Morton Vale Pipeline Contract, the Authority noted that the contract requires Seqwater to only supply water to customers to satisfy customer requirements when there is a sufficient level of water availability. Therefore, the contract attributes supply risk to Morton Vale customers. This is consistent with SunWater and Seqwater supply contracts and the general regulatory framework.

The Authority considered that the terms and conditions of the Morton Vale Pipeline Contract are outside the scope of the Ministerial Direction for this review.

On the issue of access to the pipeline, new (or existing) irrigators adjacent to the Morton Vale Pipeline should be able to purchase WAE once permanent trading is in place in this WSS. Physical access is an operational matter that should be addressed as part of discussions (commercial dealings) occurring between Seqwater and customers.

Final Report

No further comment was received from stakeholders in regard to the Morton Vale Pipeline Contract.

2.4 Service Standards

Draft Report

Stakeholder Submissions

QFF (2012) submitted that customer service standards have been established in all schemes except the Central Lockyer Valley and Central Brisbane River WSSs. Customers in the Central Lockyer Valley (excluding Morton Vale Pipeline) question how prices can be

assessed without defined service standards. QFF noted that there has been no release from Bill Gunn Dam in 20 weeks and customers are being charged for natural flows.

Authority's Analysis

In response to QFF, on the absence of service standards, the Authority noted that Service Standards (also referred to as the combination of Water Supply Arrangements and Service Targets) were established for most SunWater WSSs in 2001 in consultation with customers.

Subsequently, the relevant Water Supply Arrangements and Service Targets were transferred to Seqwater for most of its irrigation schemes. However, there are no specified Service Standards in the Central Lockyer Valley WSS (where agreement could not be reached in 2001). The Authority considered that Seqwater should establish service standards for the scheme in consultation with customers.

In response to QFF's concern that customers are being charged for natural flows, the Authority noted that natural flows through a supplemented scheme are generally taken into consideration as part of the water planning processes, and as such, were considered to form part of the legitimate yield of a supplemented scheme.

Submissions Received from Stakeholders on the Draft Report

Seqwater (2013a) agreed that service standards should be established for the scheme despite the failure of SunWater and irrigators to reach agreement in 2001. Seqwater indicated it will work with irrigators and QFF to develop workable and acceptable service standards by 30 June 2014.

Authority's Response to Submissions Received on the Draft Report

The Authority agrees with Seqwater's proposed approach.

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 are two tariff groups in the Central Lockyer Valley WSS:

(a) Central Lockyer Valley (bulk); and

(b) Morton Vale Pipeline (distribution).

Seqwater proposed in its NSP that the current tariff groups continue.

Accordingly, the Authority adopted the proposed tariff groups for this WSS.

3.2 Tariff Structure

Previous Review 2006-11

Central Lockyer Valley WSS

In the 2006-11 price path, a case was identified for a 70:30 ratio of fixed to variable costs for Central Lockyer Valley WSS, given the agreed forecast water usage of 65%.

It was agreed, however, that during 2006-11, tariff structures would vary as outlined in Table 3.1.

Specifically, Part A (fixed) tariffs were forecast to recover zero percent of this WSS's revenue in 2006-07, gradually increasing to 37% of revenue by 2010-11. Similarly, Part B (variable) tariffs were expected to recover 100% initially, decreasing to 63% of revenue.

Table 3.1: Seqwater's Central Lockyer Valley WSS Tariff Structures 2006-11

Tariff Group		*2006-07*	*2007-08*	*2008-09*	*2009-10*	*2010-11*
Central Lockyer Valley	Part A %	0	14	23	31	37
	Part B %	100	86	77	69	63

Source: SunWater (2006a).

The forecast revenue shares reflected a gradual increase toward the lower bound cost ratio of 70:30, as well as the expectation that the Government would finalise the Moreton ROP for this WSS and, in so doing, introduce permanently tradeable water allocations for each customer by 2007-08. This would have allowed the application of Part A charges from 2007-08. To date, permanently tradable water allocations have not been introduced.

In the 2005-06 review, the Central Lockyer Valley WSS was identified as a Category 3 Scheme as the Government considered it was too onerous to achieve lower bound cost recovery during the 2006-11 price path.

Under the current Ministerial Direction, irrigation prices are to be set to increase in real terms at a pace consistent with the 2006-11 prices until the scheme reaches cost recovery.

Morton Vale Pipeline

In the 2006-11 price path a ratio of 70:30 (fixed to variable) costs for Morton Vale Pipeline was adopted, given an agreed forecast water usage reflecting 25% of total nominal WAE. This was maintained across the 2006-11 price path.

Seqwater also advised that for the Morton Vale Pipeline tariff group a supply contract between irrigators and Seqwater has been in place since 1995. This contract was entered into by customers to secure the development of the pipeline.

The contract requires that customers pay [bundled] Part A and B charges as well as a specified (indexed) annual fixed capital charge per ML of WAE towards the capital cost of the pipeline. In 1995, these arrangements were agreed to by customers. However, the capital charge has not been levied in recent years (that is, 2006-12).

Draft Report

Stakeholder Submissions

Seqwater

As noted in Chapter 2, given that Seqwater cannot levy a fixed charge on irrigators of the Central Lockyer Valley tariff group (as DNRM is yet to issue volumes of customer nominal WAE), Seqwater proposes that an interim volumetric charge apply that recovers total fixed and variable costs with an end-of-period adjustment to ensure revenue adequacy. The WAE for which individual customer volumes are yet to be specified (12,460 ML) is more than 75% of MP (or equivalent) WAE in this WSS.

Consistent with the approach taken in SunWater for distribution systems, Seqwater submitted that in the Morton Vale Pipeline tariff group, unbundled tariff structures should apply. That is, distribution system customers should face transparent and separate bulk (Part A and B) and distribution (Part C and D) tariffs.

Other Stakeholders

L. Brimblecombe (2012) submitted that each tariff structure should be clear and easy to understand when entering into contracts.

During Round 1 consultations in June 2012 (QCA 2012c) in this scheme, stakeholders:

(a) suggested that there are pumping costs associated with the off-stream storages and that these are likely to be a variable cost as they relate to water use; and

(b) were not certain what combination of Part A and Part B would be beneficial and considered that the Authority's Draft Report needs to provide some insight.

Authority's Analysis

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

These arrangements should provide clarity for contractual negotiations. Also in respect of the preference for certainty (Brimblecombe 2012), a four year price path and clear timelines for the issuance of permanently tradeable water allocations should provide a degree of certainty over the regulatory period – notwithstanding any within period price adjustments that may be required (see previous chapter) – noting that this is unlikely.

As outlined in Volume 1, Chapter 3: Regulatory Framework, the Authority recommended that in the absence of a nominal allocation, for individual irrigators, the bulk fixed charge should be allocated on the basis of nominal WAE currently allocated to the scheme as a whole. The variable charge should accord with the Authority's general approach (that is, reflecting variable costs).

As noted in Chapter 2, the Authority recommended that the fixed (Part A) charge should not be applied to customers of the Central Lockyer Valley tariff group until DNRM issues tradable WAE. To ensure Seqwater's revenue is cost-reflective, the Government could compensate Seqwater for the foregone revenues until bulk fixed charges are introduced.

Morton Vale Pipeline Contract

As earlier noted, the Morton Vale Pipeline Contract, which specifies a nominal volume of WAE per property, requires that customers pay an annual fixed capital charge (towards the capital cost of the pipeline) and (in addition) annual irrigation water charges set by Government (the subject of the Authority's current irrigation pricing review for 2013-17).

In 1995, these arrangements (including the capital charge) were agreed to by customers to secure the development of the Morton Vale Pipeline in the form of an explicit contract. On this basis, the Authority did not opine on the specified amount of the capital charge in the Morton Vale Pipeline Contract.

The Authority also noted that Government set irrigation water charges in 2000, and again in 2006, which included a price path towards cost recovery, in addition to the capital charge.

Pumping Costs

The Authority noted that (variable) pumping costs are essentially determined by the cost of electricity.

The Authority's findings regarding electricity costs are outlined further below.

Submissions Received from Stakeholders on the Draft Report

Seqwater (2013a) agreed with the Authority's tariff structure. Seqwater concurred that an unbundled tariff structure should apply to the Morton Vale Pipeline.

In Round 2 consultations, irrigators indicated that it is unreasonable to pay for fixed charges (Parts A and C) when there is low or zero announced allocations.

I. Lyne (2013) submitted that the proposed increase in the fixed charge for the Morton Vale Pipeline would be unreasonable based on the past reliability of supply. I. Lyne suggested the fixed charge should be set at half of the variable charge. An alternative would be to set the charge in proportion to water supply available – if supply is limited to 50% the fixed charge should be 50%.

Morton Vale Pipeline customers queried whether the charges included the capital charge outlined in the contract. There was concern that the capital charge and the Part A charge might represent double-dipping and could be inconsistent with the original contract.

B. Sippel (2013) submitted that as the Morton Vale Pipeline seems to be running economically, there should be very little change to pricing.

Authority's Response to Submissions Received on the Draft Report

Under the Authority's pricing framework, the Parts A and C charges are intended to recoup the fixed costs of providing water services regardless of whether water is available.

A charging structure that varies according to the level of announced allocations would mean a revenue shortfall for Seqwater in certain years. This would require higher fixed charges overall to recoup the required revenue. For both the Central Lockyer Valley and Morton Vale Pipeline tariff groups, fixed charges fall short of full cost recovery in any case, and irrigators are subsidised through a CSO paid by Government.

In regard to the Morton Vale Pipeline Contract, the Authority's recommended prices do not include the capital charge. This is a separate charge negotiated between irrigators and Government to ensure the construction of the pipeline and is considered outside the Authority's remit. The charge reflects a return of, and on, capital and does not result in double-dipping as the Authority's cost-reflective charge does not include a comparable capital component. The Authority's renewals annuity relates to future expenditure for future replacement and renewal of existing irrigation assets.

The Authority's proposed changes to pricing should further improve the efficiency of Morton Vale Pipeline, by ensuring that fixed charges cover fixed costs and variable charges cover variable costs. However, the current prices (set in 2005-06) are not a strong indicator of the prudent and efficient forecast cost of operating this scheme.

3.3 Water Use Forecasts

Previous Review

During the 2006-11 price paths, water use forecasts played an essential role in the determination of the tariff structures and prices.

In the previous review, up to 25 years of historical data was collated for nominal WAEs, announced allocations and volumes delivered. The final water use forecasts were based on the long term average actual use level. Where there was a clear trend away from the long term average, SunWater adjusted the forecast in the direction of that trend.

Usage forecasts also took into account SunWater's assessment of future changes in industry conditions, impact of trading and scheme specific issues (SunWater 2006a).

For the Central Lockyer Valley WSS, SunWater (2006b) assumed a water use forecast of 65% of WAE in the bulk tariff group and 25% for Morton Vale tariff group.

Draft Report

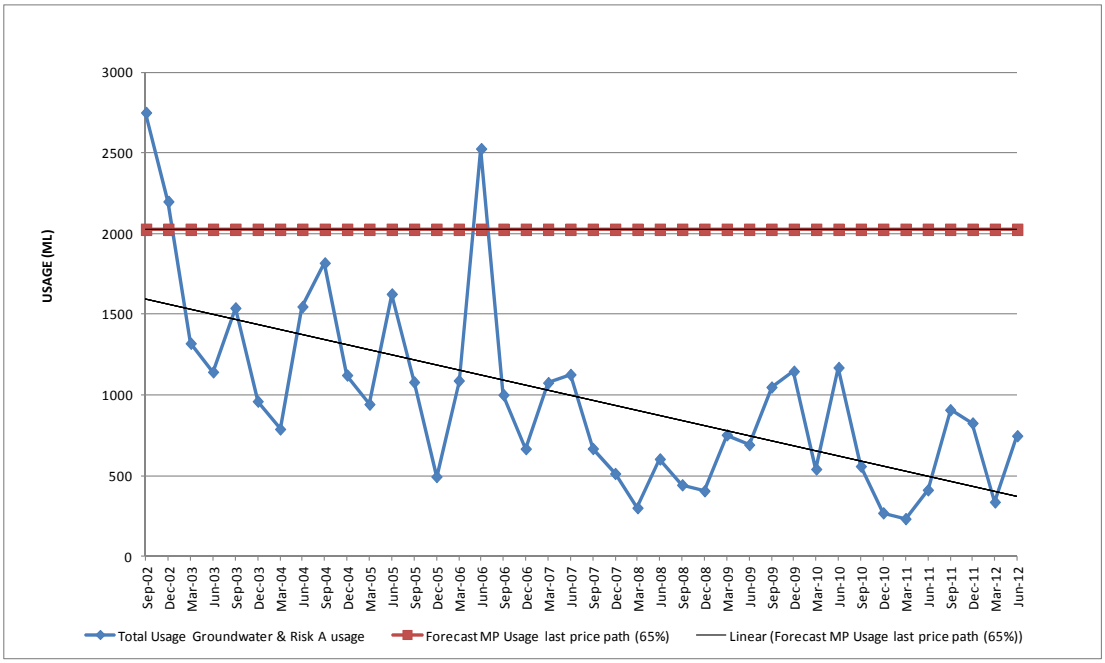
Stakeholder Submissions

Seqwater

Figure 3.1 and Figure 3.2 show the historic water use data for the Central Lockyer Valley and Morton Vale Pipeline tariff groups as submitted by Seqwater (2012am).

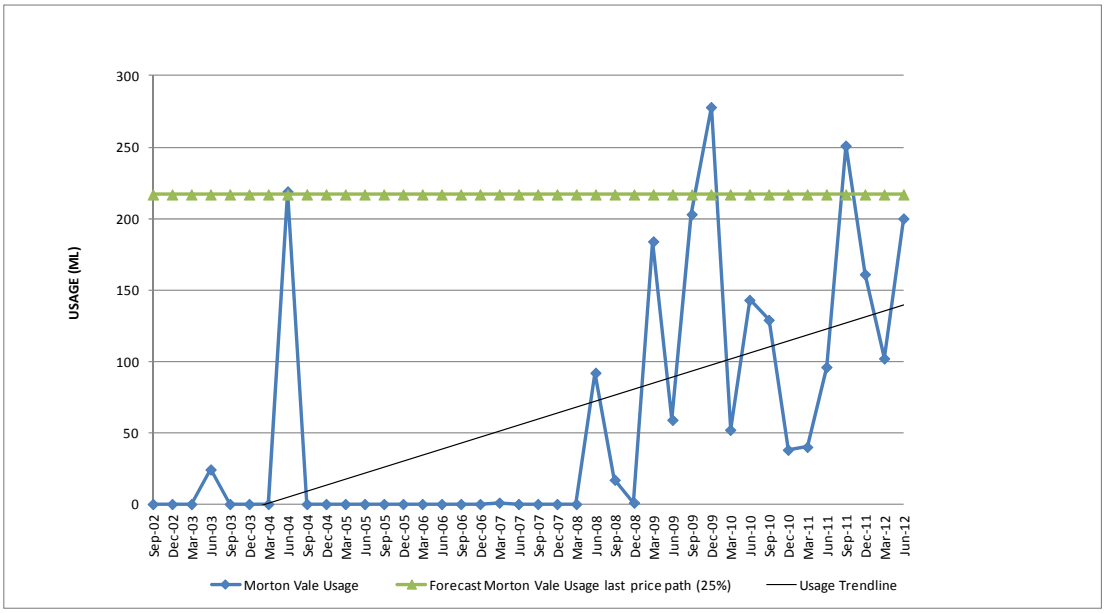
Seqwater (2012am) submitted that average actual water use over the previous price path period was much lower (2645ML/year) than the volumes forecast (8,096ML/year). Over the 9 years to December 2011, Seqwater advised that average use was 3,935ML/year.

Figure 3.1: Water Use for the Central Lockyer Valley Tariff Group



Source: Seqwater (2012am).

Figure 3.2: Water Use for the Morton Vale Pipeline Tariff Group



Source: Seqwater (2012am).

Seqwater noted that announced allocations for MP water for Central Lockyer Valley bulk supply were 0% from 2003-04 to 2006-07 (four years), and were 20% in 2007-08 and 81% in 2008-09. Announced allocations were 100% since 2009-10.

Average water use in Central Lockyer Valley tariff group was 2645ML per annum compared to the forecast average of 8096ML per annum over the same period.

During the 2006-11 price path, average annual water use in the Morton Vale Pipeline tariff group was 209ML per annum compared to the forecast 877ML per annum.

Other Stakeholders

Stakeholders during the Round 1 consultations in June 2012 (QCA 2012c) considered that due to currently full water storages, water use is likely to be higher than historical averages for 2012-13 and 2013-14 (first year of the regulatory period).

Authority's Analysis

Stakeholders in the Central Lockyer Valley WSS considered that due to currently full water storages, water use is likely to be higher than historical averages for 2012-13 and 2013-14 (first year of the regulatory period). While this may turn out to be correct, significant uncertainty exists.

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.

Final Report

No submissions were received in regard to water use data.

3.4 Distribution Losses

Introduction

Seqwater holds WAEs to account for distribution losses involved in delivering water to Morton Vale Pipeline customers.

In the previous price path, the costs of distribution losses were allocated to distribution users.

There are no bulk losses WAE in the Central Lockyer Valley tariff group, which is consistent with the situation found in SunWater bulk schemes.

Draft Report

Stakeholder's Submissions

Seqwater

Seqwater (2012aj) submitted that distribution loss WAEs are held for losses incurred in supplying customer WAE and that prices should incorporate costs relating to distribution and bulk loss [where they apply] WAE. Seqwater supports the Authority's (SunWater) findings that:

(a) costs associated with distribution losses are to be recovered exclusively from distribution system customers; and

(b) customers should not pay for distribution loss WAE that are in excess of requirements to meet actual losses.

Seqwater (2012aj) submitted that for Morton Vale Pipeline only limited data on actual distribution losses has been recorded and that it reports only total nominal loss IWAE to DNRM (not actual distribution system losses).

Seqwater (2012s) noted that, based on past experience, actual losses are likely to be substantially lower than the 184 ML of nominal IWAE. However, there is insufficient historical data available for an assessment of appropriate losses in the Morton Vale Pipeline.

Accordingly, Seqwater considers that no adjustment should be made by the Authority (Seqwater 2012s). Seqwater has proposed to adopt the SunWater approach to the treatment of distribution losses for pricing purposes. Therefore, Seqwater proposes to calculate the (lower bound) cost reflective Morton Vale Pipeline tariffs by incorporating the bulk water costs attributable to the full 184ML of HP distribution loss IWAE.

Table 3.2 below identifies Seqwater's nominal (HP) distribution loss WAE as a portion of total WAE in the WSS and as a portion of Morton Vale Pipeline tariff group WAE.

Table 3.2: Morton Vale Pipeline Distribution Loss IWA (ML)

4.	MP Loss WAE	HP Loss WAE	Customer WAE	Total WAE	Loss WAE as a % of Total WAE
Central Lockyer Valley WSS *	0	184	16,315	16,499	1.1%
Morton Vale Pipeline tariff group	0	184	3470	3,654	5.0%

Source: Seqwater (2012am). Note: Central Lockyer Valley WSS includes Morton Vale Pipeline (whole of scheme).

Other Stakeholders

QFF (2012) submitted that distribution losses in Morton Vale Pipeline should be assessed to determine if there is a case to have excess distribution losses paid for by Seqwater at no cost to the irrigation scheme.

Brimblecombe (2012) commented that distribution losses should be nil in Morton Vale Pipeline.

Authority's Analysis

As noted in Volume 1, the Authority accepted that loss WAE are a valid consideration in establishing the cost of providing distribution services as they relate to the additional storage infrastructure required to ensure the level of supply required by distribution customers.

However, the Authority also considered that, in principle, customers should not pay for loss WAEs held by Seqwater in excess of that needed to meet actual loss requirements.

In Seqwater's case, on the basis of the available information, it was not possible to estimate efficient loss WAE and for that reason has recommended DNRM review the loss WAE in schemes such as the Central Lockyer Valley WSS, where ROP amendments are needed to make permanent water trading available.

Distribution customers benefit from HP losses, as these may be released to fill the pipeline for all users and are not (in the Morton Vale Pipeline tariff group) used to deliver HP water. Periodically emptying the distribution system may also be necessary at times to enable major maintenance work.

The Authority confirmed that Seqwater's practice of using HP loss WAE to supply MP customers is consistent with the water planning framework.

In Morton Vale Pipeline there are no HP customers. Nevertheless, 100% of HP loss WAE could be required from time to time to ensure the integrity of the distribution system.

Accordingly, the Authority accepted that the bulk cost allocated to the 184 ML of HP distribution loss WAE in this WSS, should be met by (MP) customers of the Morton Vale Pipeline tariff group.

However, there is currently insufficient historical data available to determine a lower, efficient amount of loss WAE.

The Authority therefore recommended that the volume of distribution loss WAE in this WSS should be reviewed by DNRM (and Seqwater) as part of the recommended amendments to the Moreton ROP by 30 June 2015.

Once the results of the reviews are known, any material impact on prices can be taken into account either through a within or end of period adjustment.

Submissions Received from Stakeholders on the Draft Report

Determining Efficient Level of Loss WAE

Seqwater (2013) and QFF (2013b) supported the Draft Report recommendation that DNRM determine efficient bulk and distribution loss WAE.

Seqwater (2013a) agreed in-principle with the recommendation for a review of all bulk and distribution loss WAE by 30 June 2015, but suggested the review should only occur for schemes that are subject to a ROP. For schemes subject to an IROL, such as Central Lockyer Valley WSS, the review should be carried out in conjunction with ROP amendment. This is needed so that Seqwater is able to trade any excess loss WAE.

DNRM (2013) submitted that it does not support the Draft Report recommendation that DNRM review and determine the efficient levels of bulk and distribution loss WAE. The volume of WAE needed to cover the distribution losses is essentially a function of operation, asset maintenance and contractual arrangements between the scheme operator and the customer. It is inappropriate for a natural resource regulator such as DNRM to be exercising judgement as to what the appropriate loss WAE should be.

DNRM submitted that the initial allocation of loss WAE was established by DNRM based on a strategy aimed at minimising the risk of the water service provider having insufficient water to meet obligations to customers. The decisions were often based on limited information about the appropriate quantum of loss WAE. This led to a conservative [high] volume being allocated.

The mechanism for reducing the volume of distribution loss WAE would be to change its purpose to ‘any’. This change may be applied for by the entitlement holder (Seqwater) under section 130 of the Water Act. The WAE could then be sold.

Such a change of would need to be instigated by Seqwater as the holder of the loss WAE. Grounds for such a change could be revised operational requirements, improved infrastructure and/or better information. Such an application would need to be supported by sufficient information to enable the Chief Executive of DNRM to decide the application’s merits including documentation of the actual distribution losses incurred.

Timing

Seqwater (2013) and QFF (2013b) supported the Draft Report recommendation that DNRM determine efficient bulk and distribution loss WAE by 30 June 2015.

DNRM submitted that instead of introducing permanently tradeable water allocations in the Central Lockyer Valley WSS by 30 June 2015, it proposes to issue customer IWA by 30 June 2017. [DNRM proposed no alternative date for the ROP amendment that would be associated with the issuance of water allocations.]

Cost of Inefficient Loss WAE

Seqwater (2013) supported the Draft Report recommendation that costs of (any) inefficient loss WAE, as identified by DNRM, be borne by Seqwater. Seqwater submitted that this should be subject to permanently tradable water allocations being in place.

QFF (2013b) submitted that customers should not pay for loss WAEs held by Seqwater in excess of requirements and that if (any) inefficient loss WAE is identified, then it may be necessary for prices to be adjusted from 1 July 2015.

Authority's Response to Submissions Received on the Draft Report

Determining Efficient Level of Loss WAE

The Authority notes Seqwater's and QFF's support for the recommendation that DNRM determine efficient bulk and distribution loss WAE.

The Authority also notes DNRM's submission that because the appropriate volume of loss WAE is essentially a function of scheme operation and contractual arrangements between the WSS and customers, it is inappropriate for DNRM to exercise judgement as to what the appropriate volume of loss WAE should be. In response, however, the Authority notes that:

(a) DNRM has an ongoing role in WRP and ROP compliance and review; and

(b) DNRM is well placed to initiate a review to determine the efficient level of bulk and distribution loss WAE.

Further, the Authority notes the outcome of the SunWater review which identified that the original volumes of loss WAE were conferred by DNRM. As part of that review, SunWater was found to be holding loss WAE well in excess of requirements. A recommendation of the SunWater review (endorsed by Government) was that (the then) DERM immediately review SunWater's loss WAE.

The Draft Report identified three possible means for reviewing loss WAEs under the *Water Act 2000*, with the most effective being an amendment to the ROP.

With reference to the *Water Act 2000*, the Authority also notes that one intention of the legislation (Section 10) is to: "advance sustainable management and efficient use of water by establishing a system for the planning, allocation and use of water (through mechanisms such as the WRP and ROP)." Sustainable management "allows for the allocation and use of water for the physical, economic and social wellbeing of the people of Queensland and Australia within limits that can be sustained."

Accordingly, the Authority remains of the view that the efficient level of bulk and distribution system loss WAE needs to be reviewed and determined by DNRM according to the same timeframes established for ROP amendments.

Timing

In relation to timing, the Authority notes that Morton Vale Pipeline is yet to be included in the Moreton ROP. Stakeholder comments broadly support the need for losses to be reviewed with this review being undertaken in conjunction with the other proposed ROP amendments.

The Authority intends the Final Report recommendations to be achievable. Accordingly, in relation to loss WAE in the Central Lockyer Valley WSS, the Authority recommends that DNRM review loss WAE and make a preliminary determination as to the efficient level of HP and MP loss IWA by 30 June 2016 (along with its preliminary determination of customer IWAs).

Further, the Authority recommends that DNRM amend the Moreton ROP by 30 June 2017, establishing the efficient level of loss WAE (water allocations) for the Central Lockyer Valley WSS (along with permanently tradable water allocations for customers).

Cost of Inefficient Loss WAE

The Authority notes submissions from Seqwater and QFF that costs associated with (any) inefficient loss WAE be identified subsequent to DNRM's review with these costs to be borne by Seqwater. QFF also submitted that it may be necessary to adjust prices from 1 July 2015 as a result of this review.

The Authority endorses these views but notes that for Central Lockyer Valley WSS, any adjustment to prices would need to be from 1 July 2016 when IWAs are expected to be established. The Authority's recommended fixed Part A tariffs are based on this expectation (see Chapter 6).

For Morton Vale Pipeline, Seqwater submitted that excess loss WAE likely exist. The Authority also notes Seqwater (2012s) submitted (as outlined in the Draft Report) that actual losses are likely to be substantially lower than the current nominal volume of 184 ML. The Authority also notes Seqwater's System Leakage Management Plan (2010) which states;

> *There is no regular annual shut-down for maintenance....(as shutdowns are) scheduled on a needs basis. With this advanced notice, actions can be taken to reduce or prevent any losses due to the draining of pipelines to allow access for maintenance or repairs.*

Until the loss WAE are reviewed, the Authority considers it inappropriate for irrigators to bear the cost of total loss WAE and now recommends that Morton Vale Pipeline customers pay the costs associated with 50% of the interim loss WAE in this tariff group. That is, the allowance for nominal losses should be reduced from 184ML to 92ML until a revised value for loss WAE is established.

4.1 Termination (Exit) Fees

Introduction

It is SunWater's current practice to charge termination fees when a distribution system WAE is permanently transferred to another section of the scheme, generally the river.

The only Seqwater tariff group where termination fees currently apply is the Morton Vale Pipeline tariff group.

Draft Report

Stakeholder Submissions

Seqwater

Seqwater submitted that supply contracts exist between irrigators of the Morton Vale Pipeline and Seqwater. These contracts provide for an early termination of the capital charge. The termination fee in such a circumstance is to be calculated as the present value (PV) of outstanding capital charge payments to 2026, discounted at a nominal interest rate of 5% per annum.

In addition, the contract requires the irrigator to continue to pay ongoing (annual) water charges. These water charges constitute those prescribed for the supply of water from Lake

Clarendon as determined annually under the *Water Resources (Rates and Charges) Amendment Regulations* or subsequent legislation.

Seqwater submitted that, regardless of the merits of the Authority's approach to the calculation of termination fees, as outlined in the SunWater review 2012-17, the contracts between Seqwater and Morton Vale Pipeline customers set out an agreed approach to the calculation of termination fees.

Accordingly, Seqwater (2012aj) and Seqwater (2012s) submitted that should the Authority recommend termination fees to apply to customers of the Morton Vale Pipeline, the conditions of the existing contract will have precedence.

Other Stakeholders

QFF (2012) submitted that termination fees for the Morton Vale Pipeline, and past Government decisions regarding the establishment of the pipeline, should be reviewed to clarify any issues that could affect pricing.

Further, QFF stated that the implications of the termination fee provision in the Morton Vale Contract need to be clarified.

Authority's Analysis

In Volume 1, the Authority noted that the purpose of a termination fee is to ensure that a customer's departure does not result in a financial cost to Seqwater or, as currently occurs, to remaining customers. However, it should also provide an incentive to Seqwater to reduce costs following a customer's departure from a distribution system.

As outlined in Volume 1, the Authority recommended a planning period of 20 years for the calculation of the renewals annuity and an annual rolling (recalculation of the) annuity (discounted by the Authority's recommended weighted average cost of capital (WACC)). Consistent with this approach, the Authority recommended that the termination fee for each year will reflect 20 years of fixed costs (which include forecast renewals and fixed operating expenditure), although due to the rolling annuity approach over the next four-year regulatory period, 23 years of data will be incorporated.

The Authority recommended that costs not recovered via the termination fee are not to be passed on to customers in the form of higher (future) annual water charges. By not recovering all fixed costs, Seqwater has an incentive to reduce costs or seek out new customers, once a customer has departed the distribution system.

The Authority's approach resulted in a termination fee that equates to a multiple of about 11 times the distribution system fixed water charge (that is, 11 times the Authority's published cost-reflective Part C tariff), including GST.

If such an approach was to be taken, a lower multiple could be applied at Seqwater's discretion should it be consistent with Seqwater's commercial interests (for example, in the interests of more efficient or reconfigured distribution system management).

However, in this WSS, the methodology underpinning the termination fee outlined in the Morton Vale Pipeline Contract (1995) differs from that recommended by the Authority as part of the SunWater irrigation pricing review 2012-17.

Irrespective of the precedence of the conditions of the Morton Vale Pipeline Contract, it would be possible for Seqwater and customers to renegotiate the Morton Vale Pipeline

Contract so as to recoup capital charges and other prudent and efficient fixed costs, whilst excluding variable costs (which would not be incurred upon exit).

Past termination fees and the Authority's recommended termination fees are detailed in Chapter 6: Total Costs and Final Prices (below).

Submissions Received from Stakeholders on the Draft Report

Seqwater noted that if it adopted the Authority's general approach for the Morton Vale Pipeline (which Seqwater advises it is prepared to do) then this would be at odds with the existing Morton Vale Pipeline Contract termination fee provisions.

Seqwater advised that if the Government approves the Authority's recommended approach to termination fees, this would provide a basis for Seqwater to undertake a review of the Morton Vale Pipeline Contract in consultation with customers.

QFF (2103b) also recommended that Seqwater initiate discussions with irrigators to renegotiate the Morton Vale Pipeline Contract to allow the Authority's termination fee methodology to apply.

QFF (2103b) submitted that the original entitlements associated with the Morton Vale Pipeline were 5,051 ML. The termination fee, therefore, should be based on a Part C tariff that reflects the 5,051 ML original capacity (not the 3,470ML WAE proposed by Seqwater).

DNRM (2013d) submitted that the Morton Vale Pipeline was originally built to provide approximately 5,000ML but irrigators, over time, have relinquished some allocations.

B Sippel (2013) questioned whether volumes that had been handed back incurred termination fees, and whether the running costs attributed to these volumes are now being paid by remaining users.

Authority's Response to Submissions Received on the Draft Report

The Authority notes QFF's recommendation that Seqwater initiate discussions to renegotiate the Morton Vale Pipeline Contract. The Authority supports this recommendation but notes that any proposed changes to this contract would be a matter for Seqwater and its customers.

Specifically, the Authority notes that if Seqwater renegotiate the Morton Vale Pipeline Contract the Authority's recommended termination fees should apply.

The Authority also notes QFF's submission that fixed costs associated with the Morton Vale Pipeline should be based on a fixed (Part C) tariff that reflects the original capacity of the pipeline as opposed to the current nominal volume. This would result in a lower termination fee than would otherwise apply.

The Authority accepts this approach. The nominal WAE volume used in the cost allocation process is 5,051ML, on the basis that this is the volume specified in the Morton Vale Pipeline Contract – forming the basis of the agreed share of costs at the time.

In response to B. Sippel, the Authority notes submissions that volumes handed back in the reduction from 5,051ML to the current 3,470ML did not incur termination fees as it was not considered necessary at the time (DNRM 2013d). As noted above, the Authority proposes that the original volumes should be used for allocating costs. That is, the remaining irrigators are not expected to meet the costs for the exited WAE. The issue of cost

allocation for the determination of Morton Vale Pipeline Part C (fixed) charges is discussed in detail in Chapter 6: Total Costs and Final Prices (further below).

5. RENEWALS ANNUITY

5.1 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 reviews, a renewals annuity approach was used to fund asset replacement.

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 and 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).

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

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 include direct, indirect and overhead costs (unless otherwise specified).

The key issues for the 2013-17 regulatory period are:

(a) the establishment of the opening ARR balance (at 1 July 2013);

  (i) reviewing whether renewals expenditure in 2006-13 was prudent and efficient; and

  (ii) the unbundling of the opening ARR balance for bulk and distribution systems;

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

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

(d) the methodology to calculate the renewals annuity.

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

Seqwater estimated that it manages 74 bulk water storage assets relevant to entitlement holders in the SEQ, including irrigators, local governments, industrial users and the SEQ Water Grid Manager (WGM). Seqwater (2012am) submitted that asset management practice within Seqwater does not distinguish between irrigation and non-irrigation assets; that is, assets are managed as a portfolio and not on an industry 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, although preliminary condition and criticality data for Irrigation Meter fleets in the Central Lockyer Valley WSS have been collected. This information will form a substantial part of asset management plans for these assets.

Some of the assets were renewed during 2006-13. Others are eligible for renewal over the 2013-17 regulatory period. Depending on their asset life, some are renewed several 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 consultants 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 forecast items included meter replacement costs.

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

5.2 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 2006-11 price paths were based on the opening ARR balance at 1 July 2006.

In bundled WSSs with related bulk and distribution systems such as Central Lockyer Valley, the closing ARR balance for the 2006-11 price paths reflects the combined bulk and distribution system renewals cash flows.

Seqwater (2012am) submitted that the opening balance for the Central Lockyer Valley WSS was $137,215 (including Morton Vale Pipeline).

In Volume 1, the Authority noted that the opening ARR balance in 1 July 2006 is not subject to review for the 2013-17 regulatory period.

Draft Report

Stakeholder Submissions

Seqwater

Seqwater engaged Indec Consulting (Indec 2012) to establish the 1 July 2013 opening ARR balances. Indec established opening bundled ARR balances for 1 July 2013 by:

(a) establishing a closing ARR balance on a whole of scheme (or all sectors) basis at 30 June 2006;

(b) calculating balances based on all sectors actual renewals expenditure and revenue from 1 July 2006 to 30 June 2011;

(c) applying the available Seqwater actual and forecast renewals expenditure and revenue for 2011-12 and 2012-13 for all sectors; and

(d) applying Seqwater's proposed interest rate of 0% for 2000-06 and 9.69% for 2006-13.

Unbundling

In bundled WSSs with related bulk and distribution systems such as Central Lockyer Valley the closing ARR balance for the 2006-11 price paths reflects the combined bulk and distribution system renewals cash flows. To create opening ARR balances for 2013-17, therefore, the scheme needs to be unbundled into separate ARR balances.

As noted in Volume 1, Indec Consulting (Indec 2012) proposed a 'revenue transfer' methodology to allocate the relevant portion of distribution system revenues, related to bulk costs only, from a distribution system ARR to the corresponding bulk ARR.

Indec's methodology has two key steps. However, the approach varied for each period due to data limitations, especially for 2000-06. For this reason, 2006-13 was presented before 2000-06, as the 2000-06 estimates are generally derived from 2006-13 estimates.

Step 1 – Estimating total bulk revenues paid by distribution customers:

(a) for 2006-13, total bulk revenues paid by distribution customers were estimated by multiplying the bulk Part A and Part B tariffs by distribution customer WAE and water use, respectively [achieving a retrospective unbundling of tariffs]; and

(b) for 2000-06, Indec applied the ratio of bulk revenues (determined in (a) above) to total distribution system revenue for 2006-13 to total distribution system revenues for 2000-06 to determine the bulk revenue paid by distribution customers in 2000-06;

Step 2 – Estimating the renewals portion of the total bulk revenue paid by distribution customers for 2000-13. Indec used the ratio of the renewals annuity to total lower bound costs in each year (as determined by Government for the previous two price paths).

This allowed an approximation of the renewals bulk revenue, paid by Morton Vale Pipeline customers from 2000-13, to be transferred as a cash inflow to the associated bulk ARR accounts.

Past Renewals Expenditure 2006-13

Actual direct renewals expenditure was below that initially forecast over the period in both tariff groups (Table 4.1).

Table 4.1: Forecast and Actual Direct Renewal Expenditure 2006-11 (Nominal $)

Tariff Group	*Forecast 2006-11*	*Actual 2006-11*	*Variance*
Central Lockyer Valley	990,296	177,863	(812,433)
Morton Vale Pipeline	56,344	19,437	(36,907)

Source: Indec (2012). Note: Nominal totals are used in this table. A broad comparison of nominal values over the period is considered reasonable in view of the distribution of costs over the period.

Annual amounts of actual renewals expenditure are shown in Table 4.2, allocated between direct and non-direct costs.

Table 5.2: Past (Actual) Renewals Expenditure 2006-11 (Nominal $)

Tariff Group	*2006-07*	*2007-08*	*2008-09*	*2009-10*	*2010-11*
Central Lockyer Valley					
Direct	20,072	44,531	4,962	41,521	66,777
Non-direct	11,722	13,289	1,511	12,647	20,338
Total	**31,794**	**57,820**	**6,473**	**54,168**	**87,115**
Morton Vale Pipeline					
Direct	0	16,159	0	1,111	2,167
Non-direct	0	5,304	0	339	661
Total	**0**	**21,463**	**0**	**1,450**	**2,828**

Source: Indec (2012).

Seqwater's forecast renewals expenditure for 2011-13 are based on a combination of actual renewals expenditure for 2011-12 and forecast expenditure for 2012-13. The relevant amounts are as shown in Table 4.3.

Table 4.3: Renewal Expenditure 2011-13 (Nominal $)

Tariff Group	*Actual 2011-12*	*Forecast 2012-13*	*Total*
Central Lockyer Valley	51,286	502,394	553,680
Morton Vale Pipeline	1,060	9,393	10,453

Source: Indec (2012).

Opening ARR Balances 1 July 2013

Based on the steps noted above, Seqwater's submitted opening balances for 1 July 2013 are as shown in Table 4.4, and compared to the 1 July 2006 opening balance.

Table 4.4: Opening ARR Balances, 1 July 2013 (Nominal $)

Tariff Group	*Seqwater Bundled ARR Balance 1 July 2006*	*Seqwater Unbundled ARR Balance- 1 July 2006*	*Seqwater Proposed ARR Balance 1 July 2013*
Central Lockyer Valley	137,215	(100,955)	(345,554)
Morton Vale Pipeline	n.a	238,170	984,581

Source: Indec (2012)

Other Stakeholders

Central Lockyer Valley

During Round 1 consultations in June 2012 (QCA 2012c), stakeholders were pleased with the (net) positive renewals balance in the Central Lockyer Valley WSS and the fact that Seqwater's original forecast negative annuity effectively acts as an offset to total (operating) costs allocated to customers of this distribution system.

Irrigators representing both tariff groups noted that a further submission on renewals balances was due from Seqwater to the Authority prior to the Draft Report and that, if accepted by the Authority, this may change renewals balances generally. Irrigators hoped to retain the positive balance in this bulk tariff group.

[Note: As noted above, the Authority received a further update from Seqwater on 31 October 2012. As a result, the previously positive balance of $0.46 million for the Central Lockyer Valley WSS has now become negative $0.35 million. By contrast, for Morton Vale Pipeline, the previously positive balance of $0.35 million has increased to positive $0.98 million – see Table 4.4 and preceding analysis.]

Morton Vale Pipeline

During Round 1 consultations in June 2012 (QCA 2012c), irrigators recalled that the capital charge for Morton Vale Pipeline customers was waived by SunWater for the first two years of the 2006-11 price paths due, in part, to the decision not to pressurise the pipeline for customers (this decision represented avoided renewals expenditure for SunWater). Irrigators noted that this (agreed) reduction in service particularly impacts customers whose off-takes are higher than the outlet in Lake Clarendon. As the pipeline is currently gravity fed, when storage in Lake Clarendon is low these customers cannot access water.

Irrigators also recalled, but could not be definitive in this regard, that the decision was a deferral of this renewals expenditure. Accordingly, irrigators are hopeful that (through consultation with Seqwater) this postponed renewals expenditure could eventually be agreed and implemented to ensure that the affected irrigators eventually have the same level of service as other Morton Vale Pipeline customers.

Authority's Analysis

The 1 July 2006 opening ARR balances for each (bundled) scheme were approved by Government and were therefore accepted by the Authority.

Unbundling

Seqwater sought to apportion bundled 2000-06 renewals revenue (in the absence of the required unbundled actual revenues) on the basis of actual unbundled revenue that applied during the 2006-13 period.

As part of the SunWater review, to unbundle 2000-06 revenue, the Authority preferred a longer period than the five years (2006-13) on the basis that renewals revenue, which formed the basis for pricing, was based on forecast renewals expenditure over a renewals planning period (which at the time was 30 years).

The Authority also considered that the five-year period submitted by Seqwater would be susceptible to atypical revenue conditions during flood or drought.

Accordingly, for SunWater the Authority based its unbundling on the proportions of bulk and distribution renewals expenditure for 2000-36. The Authority's recommended approach resulted in changes to opening 2006 balances.

The effect of the Authority's unbundling approach on 2006 ARR balances is shown in Table 4.5.

Table 4.5: Impact of Unbundling Methodologies – All Sectors (Nominal $)

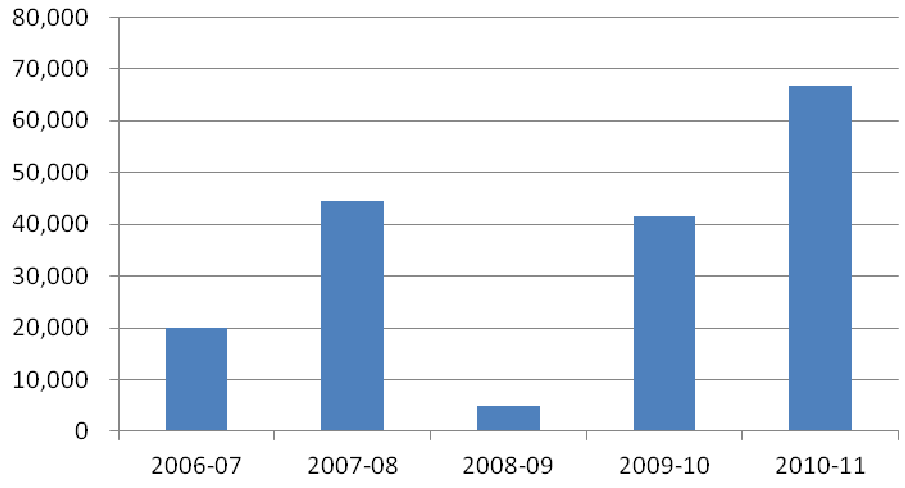
Tariff Group	*Seqwater Unbundled ARR Balance 1 July 2006*	*Authority Unbundled ARR Balance 1 July 2006*
Central Lockyer Valley	(100,955)	197,494
Morton Vale Pipeline	238,170	(60,280)

Source: Indec (2012).

Renewals Expenditure 2006-13

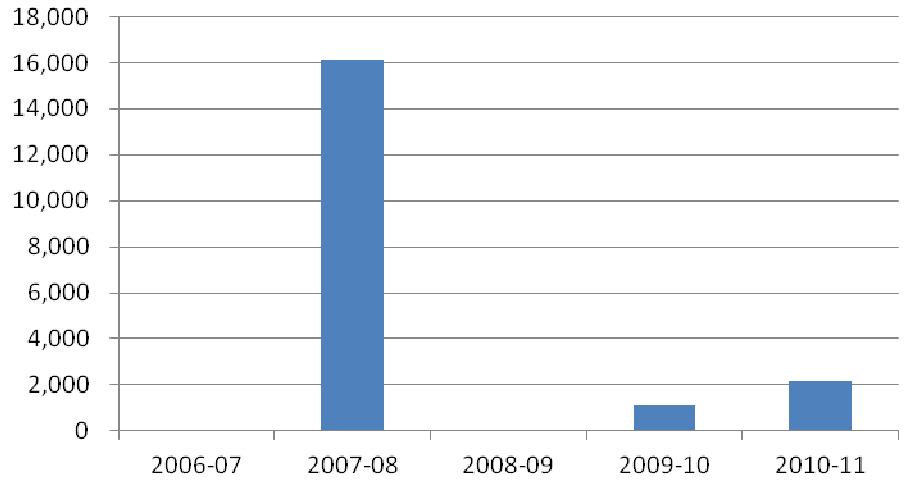
The total direct renewals expenditure over 2006-13 is detailed in Figures 4.1 and 4.2 for Central Lockyer Valley and Morton Vale Pipeline respectively.

Figure 5.1: Past (Actual) Direct Renewals Expenditure Central Lockyer Valley, 2006-11 (Nominal $)



Source: Indec (2012).

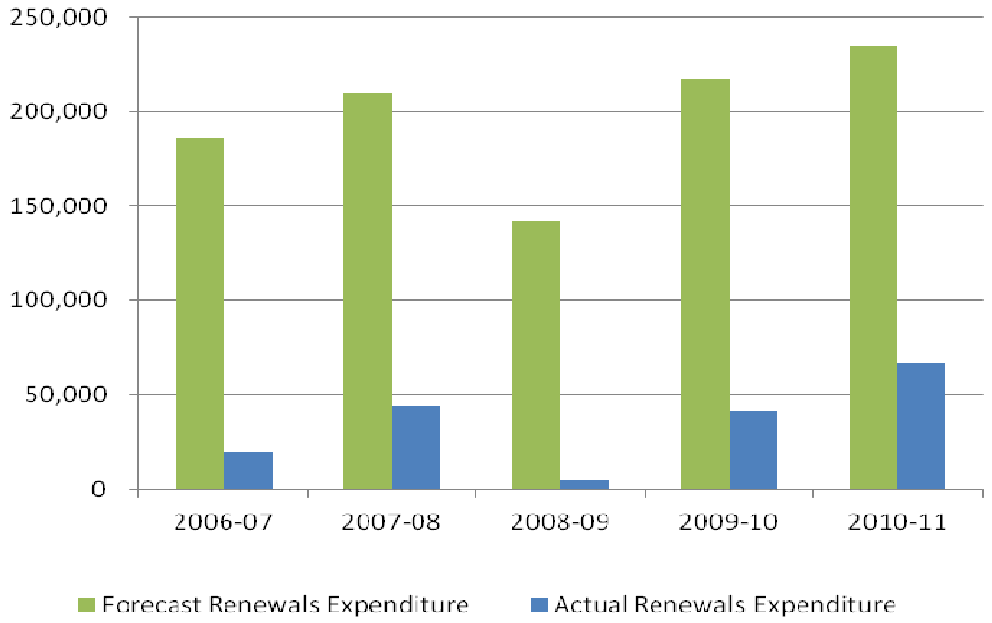
Figure 5.2: Past (Actual) Direct Renewals Expenditure Morton Vale Pipeline, 2006-11 (Nominal $)



Source: Indec (2012).

A comparison of forecast and actual direct renewals expenditure in the Central Lockyer Valley WSS for 2006-13 is shown in Figure 4.3.

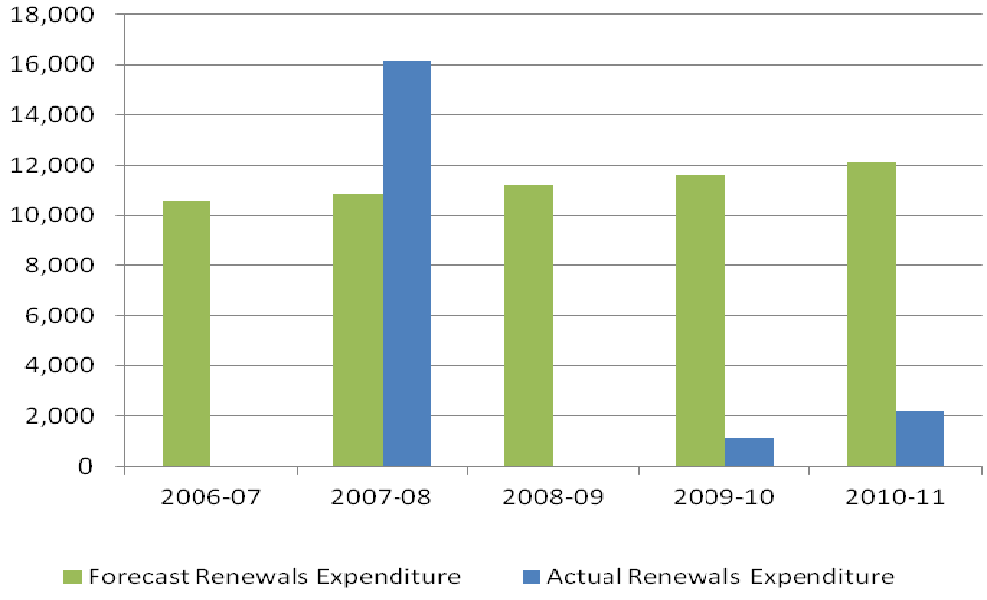
Figure 5.3: Comparison of Forecast and Actual Direct Renewals Expenditure Central Lockyer Valley, 2006-11 (Nominal $)



Source: Indec (2012).

The same comparison for Morton Vale Pipeline appears in Figure 4.4.

Figure 5.4: Comparison of Forecast and Actual Direct Renewals Expenditure Morton Vale Pipeline, 2006-11 (Nominal $)



Source: Indec (2012).

In relation to the prudency and efficiency of past renewals, the Authority noted that for the first two years of the 2006-11 price paths, SunWater managed the renewals expenditure program. Relevant WSSs were transferred to Seqwater on 1 July 2008.

For the SunWater review, the Authority excluded from prices 4% of unsampled renewals expenditure during 2006-11. This was on the basis that the Authority's reviews of a sample of past renewals items indicated cost savings of approximately 4%.

If the seven (now Seqwater and former SunWater) WSSs had been part of the SunWater review, the 4% cost reduction would have applied, as the same (SunWater) approach applied to asset planning and expenditure in the (now) Seqwater WSS.

The Authority recommended, therefore, that 4% of past renewals expenditure, for the two years that these WSSs remained under SunWater's management (1 July 2006 to 30 June 2008), be deducted from Seqwater's ARR balances.

The question remained whether any cost reductions should also apply for 2008-13, once the WSSs were transferred to Seqwater.

As previously outlined, the Authority engaged engineering consultants SKM to review Seqwater's renewals items for prudency and efficiency. The Authority did not specifically review any past capital expenditure items in the Central Lockyer Valley WSS.

SKM found that based on the inability of Seqwater to substantiate renewals expenditure incurred in 2008-09 (the first year of operating the former SunWater schemes) expenditure incurred in this year could not be considered prudent or efficient.

The Authority applied these findings to other renewals expenditure incurred in 2008-09.

One item, relating to access stairs at Jordan Weir was included at a cost of $4,810 as it could be substantiated by Seqwater.

For 2009-10 and beyond, however, Seqwater recorded renewals expenditure in a more detailed and verifiable way. As part of the SKM review, two past renewals items were selected in the Mary Valley WSS with the findings considered for application to other renewals items.

Although these items are defined as maintenance, the Authority considered that the nature of the expenditure is predominantly renewals related.

Expenditure in 2010-11 was considered to be prudent and efficient.

In response to other stakeholders' comments, the Authority noted that Seqwater's initial proposed ARR balances were substantially changed in its November NSPs. The Central Lockyer Valley WSS opening balance for 1 July 2013 changed from the significant positive amount ($457,940) to a negative amount (-$345,554). The Authority's analysis estimated a positive amount of $229,141.

Conclusion

As outlined in Volume 1, Chapter 5: Renewals Annuity:

(a) a cost saving of 4% is to apply to past renewals, consistent with the Authority's approach to SunWater, for the period 2006-08 when SunWater operated the now Seqwater assets;

(b) as Seqwater has been unable to substantiate past renewals expenditure during its first year of operating the former SunWater schemes (2008-09), renewals expenditure in that year has been reduced to zero, apart from the inclusion of one verifiable capital expenditure item for access stairs at Jordan Weir; and

(c) all renewals expenditure 2009-13 is to be accepted, unadjusted.

Accordingly, based on this approach, the Authority recommended that past renewals expenditure be adjusted as shown in Table 4.6**.**

Table 5.6: Review of Past (Direct) Renewals Expenditure 2006-13 (Nominal $)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13 (Forecast)*
Central Lockyer Valley							
Seqwater Proposed	20,072	44,531	4,962	41,521	66,777	51,286	502,394
Authority Recommended	19,595	43,159	4,810	41,521	66,777	51,286	502,394
Morton Vale Pipeline							
Seqwater Proposed	0	16,159	0	1,111	2,167	1,060	9,393
Authority Recommended	0	15,672	0	1,112	2,167	1,060	9,393

Source: Indec (2012) and QCA (2012).

Opening ARR Balance (at 1 July 2013)

Based on the Authority's assessment of the prudency and efficiency of past renewals expenditure, the recommended opening ARR balance for 1 July 2013 for Central Lockyer Valley WSS is $226,978, and for Morton Vale Pipeline the ARR balance is $417,301 compared to Seqwater's proposed balances of negative $345,554 and positive $984,581 respectively.

Submissions Received from Stakeholders on the Draft Report

Seqwater (2013a) agreed with the Draft Report recommended opening ARR balances.

Authority's Response to Submissions Received on the Draft Report

The Authority proposes no changes to its Draft Report recommendation on ARR balances.

5.3 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 (2012aj) based its renewals expenditure forecast, for the purpose of irrigation prices for the period 2013-17, on significant and predictable renewals expenditure items only. Seqwater did not include minor renewals projects (under $10,000) or water treatment plants in recreation areas (regardless of cost) as part of its forecast costs.

Seqwater's approach was adopted to focus the renewals forecasting effort on major predictable items of renewals expenditure. Seqwater used the existing FAMPs; the existing asset maintenance program; reports from site safety and dam safety inspections; and advice from operators.

Seqwater then evaluated potential items against criticality [that is, whether or not the item is critical to maintain, for example, water supply or regulatory compliance] and other criteria. Seqwater also conducted workshops with local staff, as well as site inspections, to validate and adjust the scope and timing of forecast renewals items.

Seqwater submitted a summary of the significant (higher than average value) proposed renewals expenditure items for the Central Lockyer Valley WSS as presented in Table 4.7**.**

Table 5.7: High Value Forecast Direct Renewals Expenditure 2013-17 (Real $'000)

Facility	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Central Lockyer Valley WSS				
Clarendon Dam	52	52	52	52
Clarendon Diversion Channel	26	57	40	0
Bill Gunn Dam	0	45	85	25
Lake Dyer Diversion	26	0	0	0
Water Meters	132	132	168	168
Total	**236**	**286**	**345**	**245**
Morton Vale Pipeline				
Reticulation	0	31	0	0
Water meters	0	0	17	17
Total	**0**	**31**	**17**	**17**

Source: Seqwater (2012at). 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.

The major expenditure items incorporated in the above estimates are:

(a) Clarendon Dam - replace rip rap rock on dam wall at a cost of $52,000 each year from 2013-14 to 2016-17;

(b) Clarendon Dam Pump Station - refurbish electrical control equipment at a cost of $25,000 in 2013-14;

(c) Bill Gunn Dam - replenish rip rap on embankment at a cost of $25,000 each year from 2014-15 to 2016-17;

(d) Bill Gunn Dam - refurbish pump house at a cost of $30,000 in 2015-16; and

(e) Morton Vale Pipeline reticulation outlet works – refurbishment of inlet baulks ($13,000 in 2014-15) and refurbishment of inlet screens ($18,000 in 2014-15).

The major expenditure items after 2016-17 include:

(a) Water Meters – refurbishment at a cost of $168,000 in each year of 2017-18, 2018-19, 2019-20, 2020-21 and 2021-22; and

(b) Bill Gunn Dam (Lake Dwyer Diversion) - renewal of Reinforced Concrete (RC) Pipeline in 2037-38 at a cost of $773,000. [As this cost is outside the Authority's recommended planning period it does not appear in the figures below and cannot be reflected in the Authority's irrigation prices.]

As part of its renewals program, Seqwater is also seeking to recover the cost associated with water meters. Specifically, Seqwater's business case in this regard outlines costs for: replacing existing meters; moving meter locations to comply with Workplace Health and Safety (WHS) requirements; and modifying existing meter works to comply with the meter manufactures' specifications (to ensure accuracy).

For Central Lockyer Valley and Morton Vale Pipeline, the proposed metering costs are as detailed in Table 4.8. Seqwater indicated that meter refurbishments are required at a cost of $132,000 per year in 2013-14 and 2014-15 and $168,000 per year from 2017-18 to 2021-22 inclusive.

Table 4.8: Seqwater's Proposed Metering Costs (Real $'000)

Tariff Groups	*Phase 1: 2012-13 to 2014-15*	*Phase 2: 2015-16 to 2021-22*	*Phase 3: 2022-23 to 2035-36*	*Total*
Central Lockyer Valley	264	1,176	490	1,930
Morton Vale Pipeline	0	119	42	161

Source: SKM (2012). Note: Costs in each column are the sums of costs within the indicated range of years.

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) submitted that irrigation customers have queried the flood related costs for the timing of all significant renewals except renewals expenditure associated with the Bill Gunn Dam-Lake Dwyer diversion pipeline.

L. Brimblecombe (2012) agreed with the need for bulk renewals as long as the figures and plans are realistic.

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.

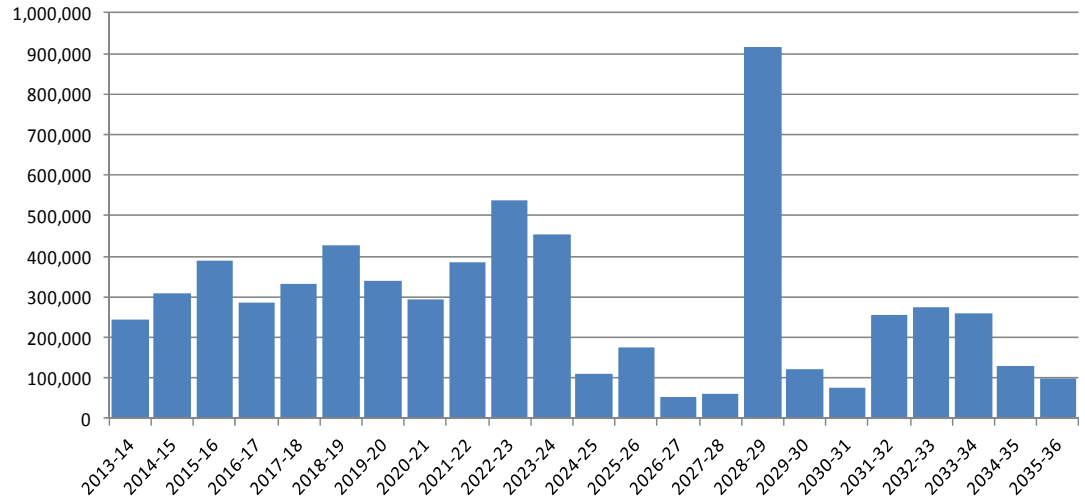
SKM concluded that although Seqwater may not currently have good asset condition information due to the lack of condition information transferred from previous operators, the policies and procedures Seqwater has adopted to assess the condition of its assets will rectify this situation over time. Accordingly,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

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

Total Costs

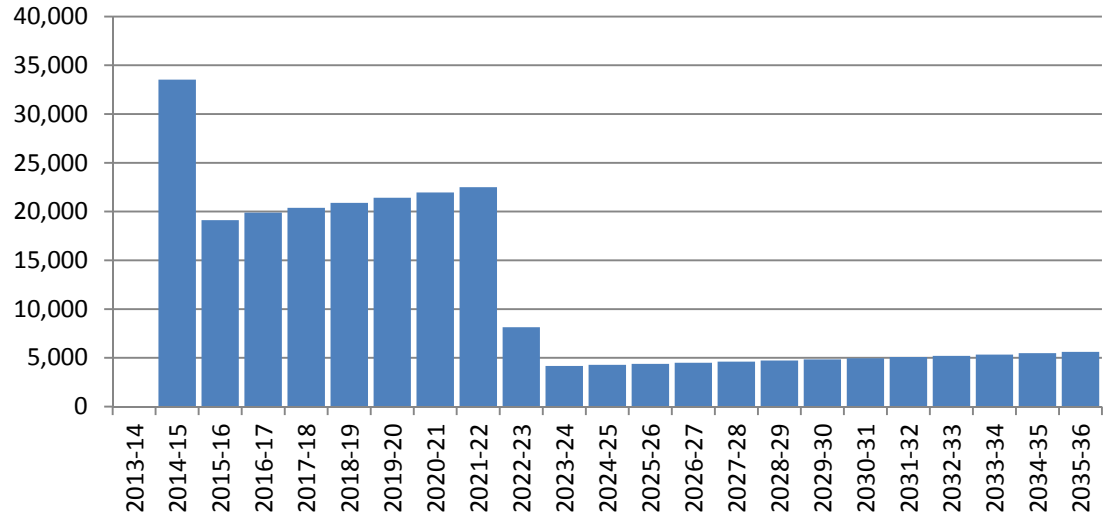
Seqwater's proposed renewals expenditure for 2013-36 for the Central Lockyer Valley WSS is shown below in Figure 5.5. The Morton Vale Pipeline forecast expenditures appears in Figure 4.6.

Figure 5.5: Forecast Renewals Expenditure (Direct), Central Lockyer Valley WSS, 2013-36 (Nominal $)



Source: Seqwater (2012at).

Figure 5.6: Forecast Renewals Expenditure (Direct) Morton Vale Pipeline, 2013-36 (Nominal $)



Source: Seqwater (2012ax).

In response to QFF's comments, Seqwater confirmed that insurance is applicable to flood related damage and that for the purpose of pricing no flood related costs were included when forecasting renewals expenditure on the expectation that insurance revenues will account for all flood related damage costs.

Item Reviews

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

Items reviewed included:

(a) specific items sampled in the Central Lockyer Valley WSS (Items 1 to 6); and

(b) items reviewed in other WSSs where the conclusions were considered by SKM to be appropriate for potential application to Central Lockyer Valley WSS or Morton Vale Pipeline Distribution System (Items 7 to 14).

Item 1: Clarendon Dam Embankment – Refurbishment of Riprap

Seqwater

This renewals item is scheduled to occur each year over a 6-year period from 2013-14 to 2018-19 inclusive at a cost of $52,000 per year, or $312,000 in total.

A similar project, not reviewed in detail by SKM, involves a $50,000 expenditure on earthworks formation at Clarendon Dam in 2020.

Other Stakeholders

No other stakeholders provided comment on this item.

Consultant's Review

Project Description

Clarendon Dam is an off-stream storage with an earth and rock-fill embankment dam, approximately 4.2km in length. Earth dams are susceptible to erosion by wave action if they are not adequately protected. In response to this issue, the designers of the Clarendon Dam included a layer of rock (or riprap) on the lake side of the embankment to absorb and disperse the wave energy.

The rock was sourced from two quarries: Phase I rock was sourced from Harlaxton Quarry near Toowoomba and Phase III rock from Ropley Road Quarry near Tent Hill Creek. Since the completion of the dam in the mid 1990s, the Phase III rock has deteriorated due to the wetting and drying cycles experienced by the raising and lowering of the lake levels. The rock has deteriorated to such an extent that Seqwater now considers sections of the riprap ineffective.

The project proposes to add additional rock to deteriorated areas of the dam face. It is intended to undertake these works over a six year period from 2013-14 financial year through to 2018-19 financial year with the timing of the works to coincide with low lake levels. Seqwater has programmed the works over a number of years to remain flexible – the rate of the works undertaken being dependent on the rate of deterioration as monitored and the availability of materials.

Project Status

The expenditure for this project is programmed to commence in the 2013-14 financial year. In the Seqwater Asset Delivery Framework it is classified as pre-implementation, in the Concept and Feasibility stage, 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 refurbishment project.

Provided Documentation

The documents used for this review are:

(a) Information Request Response – QCA Irrigation Price Review 2013-17: RFI003 Central Lockyer Valley WSS, Clarendon Dam Embankment – Refurbish Rip Rap, Seqwater, 8 August 2012; and

(b) Extract from SunWater Report 'Clarendon Dam – Strategy to Refurbish Rip-Rap', SunWater, May 2007.

The level of documentation available for this project is minimal and in SKM's consideration should be further advanced than it currently is given the level of expenditure and the fact that it is programmed to commence within 12 months.

Prudency

The renewal of the embankment riprap is necessary to protect the Clarendon Dam earth embankment from erosion due to wave action on the lake. Not undertaking this renewals expenditure could have consequential unacceptable impacts on dam safety. The safe operation of the Clarendon Dam is required to collect and store water for use in the Central Lockyer Valley WSS.

The Clarendon Dam embankment was commissioned in 1993, and hence is currently 19 years old. The timing of the renewal of the riprap is based on condition assessments.

Seqwater's standard useful asset life for dam embankment and dam civil works is 200 years. Hence, the renewal of the riprap commencing in 2013-14 will occur much sooner than the nominal useful asset life would predict.

From its investigations, SKM indicated that the rock sourced from Ropley Road Quarry was known to have poor durability characteristics at the time of construction and vulnerable to slaking (deterioration from wetting and drying cycles). Standard procedure during the construction of an earth dam is to undertake rigorous and frequent testing of the soils and rock used to construct the dam. Hence, the supply of riprap with a lower durability by the dam constructor was an informed decision.

This decision would be based on balancing the cost of sourcing and transporting rock with superior durability characteristics from a quarry further afield, and using rock from Ropley Road Quarry with a shorter asset life.

Whilst specific documentation of this decision was not sighted, SKM believed this to be a reasonable explanation for the course of events during construction, and that the dam owner knowingly accepted the risk. Hence, recourse against the supplier was not considered to be a feasible action for Seqwater.

The SunWater report recommended that Seqwater put in place a regular (12-monthly) deterioration monitoring programme. Such monitoring occurs as part of annual dam

inspections, and will continue throughout the proposed renewal works to focus on areas of greatest need.

The scope of works is to place 1,800 m^3 of 200mm new nominal diameter riprap on the upstream face of the dam. The rock will be placed in patches where the deterioration of the existing riprap is of most concern. The work is expected to take place over six years, with an average of 300 m^3 of rock being placed each year.

SKM considered this approach to be consistent with the need identified in the SunWater report, with the addition of flexibility in the works programme.

On the basis that the safe operation of Clarendon Dam is required to operate the Central Lockyer Valley WSS, and condition of the riprap (as per the SunWater report and as seen on-site) the project was assessed as prudent.

Efficiency

The key performance standard for this project is the quality of the rock to be used. The SunWater report identified the Withcott Quarry as the nearest potential source of riprap. However, the report was not conclusive on the suitability of the rock from this quarry and recommended further testing, including petro-graphic analysis, MBV and Wet/Dry Variation testing to be undertaken. The alternative offered in the SunWater report is Harlaxton Quarry near Toowoomba.

An economic analysis may indeed show that the patch replacement of riprap with a locally sourced rock (cheaper but with lower durability) may be preferred to importing rock from a distant quarry (expensive but higher durability). Such an analysis should be part of Seqwater's option analysis and will be reflected in the investment required for these works.

Seqwater provided a summary of annual costs as per Table 4.9.

Table 4.9: Summary of Costs – Clarendon Dam Riprap Refurbishment

Item	*Seqwater Estimate*	*SKM Estimate*
Design	$3,000	$5,500
Procurement	$2,500	$2,500
Supply and Installation		
Supply to site and placement of 300 m3 of 200mm riprap @ $125/m3 (including supply, transport and placement rates estimated from local rates and Rawlinsons 2012).	$37,500	$31,500
Seqwater Internal Costs – works supervision of $3000 plus project management costs of $6000 (15% of contract costs)	$9,000	$8,500
Total	**$52,000**	**$48,000**

Source: SKM (2012).

SKM considered it is important that a suitable source of rock is known in order to complete this work, and to forecast the cost. Whilst using unit rates provided in Rawlinsons is typical for many types of construction works in the budgetary stage, the unit price for rock is highly variable. Factors such as quality (hardness, durability etc), size, and transportation cost all act to increase or decrease costs. Indeed, the cost to transport the rock from the quarry may

be a significant portion of the unit rate. SKM suggested that the identification of a quarry that can supply the rock to the required quality has not been confirmed.

SKM estimated the cost to procure 200mm riprap from the quarry gate at $40-80 per cubic metre. Additional to this is the cost to transport the rock to the dam estimated at $15-30 per cubic metre depending on the distance carted, and an excavator to place the rock estimated at $20-25 per cubic metre. Assuming the mid value of these ranges the SKM estimate of the unit rate to supply and place rock is $105 per cubic metre ($31,500 for 300 m^3). Hence, Seqwater's unit price of $125 per cubic metre ($37,500 for 300 m^3) to supply and place rock was within SKM's estimated range.

SKM assessed the allowance for Design, Procurement, Works supervision and Project Management to be consistent with other Seqwater projects and standard industry practice.

SKM recommended that Seqwater undertakes an options analysis prior to the implementation of the project as proposed. As discussed previously, such an options analysis should include a net present value analysis weighing up the durability of the rock (and hence expected usable life) and the cost to supply and replace the rock.

Given that this work is expected to commence in 2013-14 financial year SKM expected that this options analysis would be complete, at least in a preliminary sense. Key to the accurate cost of the project is the confirmation of a quarry to supply rock of the required standards such that unit prices and transportation costs can be determined.

However, given that the cost of the rock would likely be higher than the current estimate if an options analysis determined that a higher grade rock than currently sourced should be procured, and given that the current proposed costs are within +-30% of SKM's estimate, SKM determined that the proposed costs are reasonable and hence efficient.

Authority's Analysis

The Authority accepted SKM's analysis that the proposed project is prudent and efficient.

Submissions Received from Stakeholders on the Draft Report

During consultations (January 2013), irrigators asked whether there will be a warranty provided on the replacement riprap.

Authority's Response to Submissions Received on the Draft Report

The options analysis as suggested by SKM is required to determine the most cost effective option in terms of source of rock, transport costs and longevity. An expected life would be assigned to the lowest NPV option and future replacement scheduled accordingly. Any warranty is a matter for Seqwater in conjunction with its supplier.

Item 2: Clarendon Diversion Control Equipment

Seqwater

The main renewals item reviewed by SKM is scheduled for 2018-29 at a cost of $174,000.

Additional expenditures on control equipment in Clarendon Diversion of $137,000 in 2029 and $98,000 in 2034 were also identified.

Other Stakeholders

No stakeholders commented on this item.

Consultant's Review

Project Description

The Clarendon Diversion Control Equipment controls the Redbank Creek Pump Station. The equipment was originally installed in 1993. The pump station is used to harvest water from Redbank and Lockyer Creeks into Clarendon Dam. The operating rules require that the pump station must be capable of remote start up and shut down to maximise the benefit of infrequent water harvesting opportunities.

The control equipment to be replaced consists of a Control Panel, programmable logic controller (PLC), SCADA, Communications Equipment and Level Sensing and Flow Recorders (including water level indicators in the Clarendon Channel.

Project Status

The project is planned to be carried out in 2028-29. The project is currently at the Concept and Feasibility stage, and has yet to progress to preliminary design. Information available to SKM provides justification for the works based upon accepted criteria and provides a suitable time frame for implementation. SKM considered the current position in the Seqwater Asset Delivery Framework as appropriate given the value and timing of this renewal project.

Provided Documentation

The documents used for this review were:

(a) Water Monitoring Data Collection Standards, Version 2.1 Natural Resources and Water, March 2007;

(b) Irrigation Infrastructure Renewal Projections – 2013/14 to 2046/47 – Report on Methodology, Seqwater, April 2012;

(c) SM Project Outline: Clarendon Diversion Channel, Seqwater, undated; and

(d) Irrigation Request Response QCA Irrigation Price Review 2013-17: RFI005 Central Lockyer – Clarendon Diversion Control Equipment, Seqwater, 10 August 2012.

The documentation received was considered sufficient for the purposes of the prudency and efficiency assessment.

Prudency

Identified Need

While the operating rules do not in themselves require that the pump station must be capable of remote start up and shut down, this remote functionality is needed for Seqwater to maximise the benefit of infrequent water harvesting opportunities as allowed by the operating rules. The relevant section of the operating rules (as set out in the IROL) states:

> *Pumping of water from Lockyer Creek (at Jordan 1 Weir) and Redbank Creek (at Jordan 2 Weir) into Lake Clarendon may only occur when there is sufficient combined flow in Lockyer and*

> *Laidley Creeks (in excess of what is being diverted into Lake Dyer and Lake Clarendon) to overtop Kentville Weir. The maximum diversion rate to Lake Clarendon is 376 ML/day.*

The justification for remote control of the pump station hinges upon the responsibility of Seqwater to utilise the water harvesting opportunities to the fullest. The pump station can only operate when certain thresholds are reached in the Lockyer and Laidley Creeks. These stream flow events are infrequent. Failure to operate the Redbank Creek Pump Station when these opportunities arise would impact detrimentally upon water availability for irrigators in the water supply scheme. Access to the pump station during flow events can be difficult as flow events coincide with rain and floods, flow events can develop with limited warning, and they may be of very short duration.

Without a remote control capability, it is not feasible to generate a response to flood events quickly enough to take advantage of the water harvesting opportunities as they arise. On this basis the renewal of the equipment is considered necessary.

SKM estimated that, of the total of $174,000 budgeted for the project, approximately $25,000 (the cost of SCADA server and auto-dialler) represents the value of the remote control function

In summary, the project documentation supported the need for replacement of the control system at the Clarendon Diversion and as such is prudent in terms of need.

Timing

The age of the existing asset is not available. A useful life of 35 years was adopted by Seqwater to determine the required renewal date of the equipment. On this basis the next programmed replacement is scheduled for 2028-29, which would indicate an original service date of 1993.

Seqwater's standard useful asset refurbishment frequency for electrical/control equipment is 18 years (refer to Appendix D of the SKM report, Irrigation Infrastructure Renewal Projections 2013-14 to 2046-47, Report on Methodology). SKM believed this 18 year refurbishment frequency is in keeping with industry standards for serviceable asset life for motor control equipment (20 years) and conflicts with the projected 35 year life adopted by Seqwater. A visual site inspection was carried out on 17/08/2012, which revealed some automated components were not functional. Ongoing condition assessment occurs through Seqwater's preventative maintenance program. A formal condition assessment is planned to occur with the expected end of the asset life.

In SKM's experience this type of control equipment can normally be expected to reach obsolescence after approximately 15 to 20 years service, beyond which it can be expected to suffer a reduction in reliability due to an increased component failure rate and a lack of service support. However, a useful life of 35 years has been adopted by Seqwater to forecast the required renewal of this equipment. This asset life has been taken from the Asset Data inherited from the SunWater Asset Systems. This asset life is considered by Seqwater to be an outer estimate for the life of the asset. SKM concurred with this view and considered that adoption of a 20 year asset life would be more appropriate.

On the basis of the foregoing discussion SKM believed the proposed timing of the asset replacement is likely to be brought forward by 15 years to 2013-14, particularly given the criticality of the installation.

Scope of works

The project provides for the replacement of control equipment, which will be at the end of its design life at the Clarendon Dam. The equipment allows pumping of water from

Lockyer Creek and Redbank Creek into Lake Clarendon whenever there is sufficient combined flow in Lockyer and Laidley Creeks. The maximum daily diversion permissible into Lake Clarendon is 376 ML.

Replacement of the equipment involves a full control panel fitted with PLC, telemetry and SCADA equipment, and the necessary water level sensing devices. The equipment proposed will be a replica of that which currently exists, which is appropriate for the application.

Conclusion

SKM considered that Seqwater should review the planned timing of the project. However, on the basis of the above commentary and with consideration of the options available and the eventual equipment selection, the project was assessed as prudent.

Efficiency

SKM indicated that the proposed works will be a relatively straightforward process involving like-for-like direct replacement of existing equipment with a system of similar capability. The works will need to comply with standard electrical installation techniques, in particular the Australian Wiring Rules AS/NZS 3000. SKM noted the system will use existing allocated radio frequencies for the SCADA and telemetry link and will not require additional licensing.

Seqwater provided a breakdown of the cost estimate for the replacement works. The major supply components of the cost have been verified independently by SKM by means of market quotations, and other cost components (such as install costs and design costs) have been estimated by SKM from historic, benchmark costs from similar projects. The summary of the cost comparison is shown in Table 4.10.

Table 4.10: Clarendon Diversion Control Equipment – Cost Estimates

Item	*Seqwater Estimate*	*SKM Estimate*
Design	$14,000	$17,000
Procurement	$3,000	$3,000
Supply and Installation		
Control panel (SS, 2 m x 0.8 m x 0.4 m) with termination wiring	$27,500	$20,000
PLC - Siemens, SIMATIC S5-100U, 14 I/O cards	$27,500	$30,000
PLC wiring and termination	$15,000	$12,000
SCADA server	$15,000	$10,000
Auto-Dialer	$10,000	$10,000
Multitrode and level sensors	$10,000	$10,000
Flow recorders	$12,000	$12,000
Phone lines 1 km each 3 off	$8,000	$8,000
Seqwater Internal Costs	$32,000	$32,000
Total	**$174,000**	**$164,000**

Source: SKM (2012).

On the basis of this comparison, SKM considered that the Seqwater estimate is efficient as the scope is appropriate, the standards of works are consistent with industry practice and the costs are consistent with prevailing market conditions.

Authority's Analysis

The Authority accepted SKM's analysis that the proposed project is prudent and efficient. However, the Authority noted that the expenditure may need to be brought forward.

Item 3: Gauging Stations

Seqwater

In Seqwater's NSP, this renewals item is scheduled for 2022-23 and 2032-33 at a cost of $60,000 in each year ($120,000 in total). Seqwater subsequently revised the cost estimate for each installation to $71,700.

Other Stakeholders

No stakeholders commented on this item.

Consultant's Review

Project Description

The project provides for the renewal of gauging and associated telemetry assets in the Central Lockyer Valley WSS.

The relevant gauging station locations are as follows:

(a) Bill Gunn Dam Head Works (HW);

(b) Clarendon Dam HW;

(c) Showgrounds Weir HW;

(d) Lockyer Creek Gauging station;

(e) Redbank Gauging Station; and

(f) Bob Bird Hut.

The gauging station locations are at the headwater and the tailwater levels at each site. Seqwater proposes to install new water level recorders and data loggers at stream gauging stations during the 2022-23 financial year in order to better meet the compliance requirements of the Central Lockyer Valley IROL. The works nominated in this project will be replacement of both the upstream and downstream gauging equipment on a 10 year recurrence interval.

The project is recurring, due to the anticipated deterioration over time of the electronic and communications equipment which will be used. In SKM's experience this type of equipment can typically be expected to reach obsolescence in industry after approximately 10 years service, beyond which it can be expected to suffer a reduction in reliability resulting from an increased component failure rate and a lack of service support.

Project Status

The project is not to be carried out until 2022-23, and then repeated in 2032-33. In the Seqwater Asset Delivery Framework, as discussed in SKM's report Assessment of Capital and Operating Expenditure – Seqwater (June 2012), the project would be classified as pre-implementation, in the Concept and Feasibility stage, meaning prior to preliminary design. SKM considers the current position of the project in the Seqwater Asset Delivery Framework as appropriate given the value and timing of this renewal project. The project is ready to proceed to the preliminary design phase.

Provided Documentation

The documents used for this review are:

(a) Water Monitoring Data Collection Standards, Version 2.1 Natural Resources and Water, March 2007;

(b) Interim ROP for Central Lockyer Valley Water Supply Scheme, Natural Resources and Water, July 2008;

(c) SM Project Outline: Central Lockyer Valley Gauging Stations, Seqwater, undated;

(d) Irrigation Infrastructure Renewal Projections – 2013/14 to 2046/47 – Report on Methodology, Seqwater, April 2012; and

(e) Irrigation Request Response – QCA Irrigation Price Review 2013-17: RFI006 Central Lockyer Valley WSS – Gauging Stations, Seqwater, 8 August 2012.

The documentation received was considered sufficient for the purposes of this prudency and efficiency assessment.

Prudency

The need for this project was determined for different reasons depending on the location, and summarised as follows:

(a) Bill Gunn Dam HW: to fulfil regulatory obligations specified in the IROL, and dam safety compliance;

(b) Clarendon Dam HW: to fulfil regulatory obligations specified in the IROL, and dam safety compliance;

(c) Showgrounds Weir HW: to fulfil regulatory obligations specified in the IROL;

(d) Lockyer Creek Gauging Station: required operationally for warning of flow events that trigger operation of the Clarendon Diversion Pump Station;

(e) Redbank Gauging Station: required operationally for control of Clarendon Diversion Pump Station; and

(f) Bob Bird Hut: required operationally to measure releases from Clarendon Dam to the Lockyer Creek.

The IROL requires continuous time series data for the water level (headwater) and the stream flow (tail water) at Bill Gunn Dam, Clarendon Dam and Showgrounds Weir. In addition releases from Clarendon Dam are required to be recorded by the gauge at Bob Bird Hut. The proposed gauging and telemetry equipment will fulfil these requirements.

The telemetry system is used to provide continuous, real time, water level measurements to DNRM. The telemetry function is of limited value to the irrigators as it is not used for controlling water flow to irrigators, but remains useful for identifying water harvesting opportunities. As the telemetry function is arguably an IROL condition, it can reasonably be argued that it was the irrigators that triggered the need and hence they should pay for the necessary infrastructure to meet the licence condition. This is a position supported by SKM.

Lockyer Creek and Redbank Gauges are critical for Seqwater to maximise the diversions to Clarendon Dam (an outcome that is of particular interest to the irrigators) while ensuring there is no breach of the diversion restrictions. Without these gauges Seqwater cannot determine that there is a flow in the Lockyer creek upstream of Kentville Weir. Furthermore, data from the gauges is critical for Seqwater to comply with reporting on flow event management as required by the IROL.

In summary, the project documentation provided supported the need for replacement of the gauging stations at all Central Lockyer Valley locations (Bill Gunn Dam, Clarendon Dam, Showgrounds Weir, Bob Bird Hut, Lockyer Creek and Redbank).

Timing of asset replacement or refurbishment

The age of the existing manually-read gauging system is not clear. However, ongoing condition assessment occurs through Seqwater's preventative maintenance program and via operator reports. A formal condition assessment will occur with the expected end of the asset life. The condition assessment by Seqwater has dictated replacement in 2022-23. As the expected life of the asset is 10 years, Seqwater has programmed the next replacement to occur in 2032-33.

Seqwater's standard useful asset life for telemetry components and level measurement equipment is 10 years (refer Appendix C of the SKM report, Report on Methodology). Seqwater's standard asset refurbishment period for telemetry has yet to be determined (refer Appendix D of the SKM report, Report on Methodology). In the absence of any determination for this SKM believed the standard asset life, which is in keeping with industry standards and hence appropriate, should be used.

As discussed earlier, this type of equipment can normally be expected to reach obsolescence in industry after approximately 10 years service, beyond which it can be expected to suffer a reduction in reliability due to an increased component failure rate and a lack of service support. In some cases the equipment life may be extended. However in SKM's experience 10 years can be considered typical. On this basis the timing of the asset replacement was considered appropriate.

Conclusion

On the basis of the above commentary, with consideration of the options available and the eventual equipment selection, the project documentation supported the need for replacement of the gauging stations at all six Central Lockyer Valley locations (Bill Gunn Dam, Clarendon Dam, Showgrounds Weir, Bob Bird Hut, Lockyer Creek, and Redbank) and as such is prudent both in terms of need and timing.

Efficiency

There are a number of methods of level gauging available in industry but the method adopted by Seqwater involves use of a bubbler tube through which low pressure air is supplied. The outlet of the tube is near the bottom of the stream channel, and the air pressure required to achieve a minimum air flow can be used to infer the water level. This is a very simple method of fluid level measurement, appropriate for the level of accuracy required in this application. It is also robust, with no electronic field sensors, has minimal moving parts and, provided the electronic components are appropriately housed should offer very reliable service.

Other methods available include use of ultrasonic, float sensors and electrical capacitance devices, all of which involve more complex field-mounted sensors which are susceptible to damage through deterioration, storm or vandalism.

Although Seqwater has yet to undertake an options study for this project, SKM indicated that a bubbler system is favoured to maintain commonality with similar equipment used elsewhere in the system. SKM considered this method of stream gauging selected by Seqwater to be appropriate for the application.

Telemetry equipment is required for the transmission of the water levels to Seqwater central locations and for this information to be made continuously available to stakeholders via the internet. Seqwater has chosen a simple radio link (with battery back-up) to achieve this. Alternatives would include connection to a telephone landline but this would be susceptible to washout during floods. Alternatively a microwave link could be used but this would require expensive towers to achieve the "line-of-sight" links needed for repeater stations.

SKM considered this method of telemetry selected by Seqwater is appropriate for the application.

The proposed works will be a relatively straightforward process involving like-for-like direct replacement of existing equipment with a system of similar capability. The works will need to comply, where applicable, with standard electrical installation practices, in particular the Australian Wiring Rules AS/NZS 3000. The system will use existing allocated radio frequencies for the telemetry link and will not require additional licensing.

Seqwater provided a breakdown of the cost estimate for the replacement works. The major supply components of the cost were verified independently by SKM by means of market quotations, and other cost components (such as install costs and design costs) were estimated by SKM from historic, benchmark costs from similar projects. The summary of the cost comparison is shown in Table 4.11.

Table 4.11: Central Lockyer Valley WSS – Gauging Stations Cost Estimates

Item	*Seqwater Estimate*	*SKM Estimate*
Design	$5,500	$5,500
Procurement	$2,500	$2,500
Supply and Installation		
6 x Campbell Scientific CR1000 Data Logger	$25,800	$22,800
5 x water log Compressor Bubblers	$22,000	$38,800
1 x HS Shaft Encoder	$1,900	$1,900
Ancillaries (including telemetry equipment)	$6,000	$6,000
Seqwater Internal Costs	$8,000	$8,500
Total	**$71,700**	**$86,000**

Source: SKM (2012). Note that Seqwater has used their experience from Bromelton Weir upgrade to further increase the cost estimate from the original of $60,000 allowed for in the Terms of Reference.

The Seqwater estimate is lower and accepted as valid and hence efficient. The project scope is appropriate, the standards of works were consistent with industry practice and the costs were consistent with prevailing market conditions.

Authority's Analysis

The Authority accepted SKM's analysis that the proposed project is prudent and efficient. The Authority noted that Seqwater's revised cost estimate remains lower than SKM's estimate.

Item 4: Clarendon Diversion Access Road

Seqwater

This renewals item scheduled for 2022-23 includes three line items for access roads ($39,000, $35,000 and $48,000). Seqwater has advised that this project also includes two other line items for access roads in 2022-23 at a combined total of $70,000. Each line item is understood by SKM to be for a section of the Clarendon Division Access Road.

Therefore, Seqwater submitted a total cost of $192,000 for this project (revised to $193,850).

Other Stakeholders

No stakeholders commented on this item.

Consultant's Review

Project Description

This project is for the renewal of the access road and the road along both sides of the Clarendon Diversion Channel. The project is to regrade and reconstruct 12.2km of 3m-wide access road. The project scope has allowed for the placement of an average of 50mm new lift of road base material. The project is a single project, occurring in the 2022-23 financial year.

Project Status

The project is not to be completed until 2022-23. In the Seqwater Asset Delivery Framework, the project is to be classified as pre-implementation, in the Concept and Feasibility phase, meaning prior to 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 renewal project

The available information on this project is consistent with the current status of the project. At this stage, no detailed options analysis has been undertaken. This is scheduled to be completed in the Validation and Planning phase of Seqwater's Asset Delivery Framework at a later date, prior and closer to the Implementation phase when the project is due to be delivered and commissioned. SKM considered this approach to be in line with good industry practice as it is appropriate to undertake a more detailed assessment closer to the planned date of delivery, some ten years hence, when the condition of the existing infrastructure can be reassessed.

Documentation Provided

The documents used for this review were:

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

(b) Irrigation Infrastructure Renewal Projections – 2013-14 to 2046-47 – Report on Methodology, Seqwater, April 2012;

(c) Central Lockyer Valley WSS– Network Service Plan, Seqwater, undated;

(d) Irrigation Infrastructure Renewal Projections – 2013-14 to 2046-47: Report – Central Lockyer Valley Tariff Group, Seqwater, April 2012;

(e) Information Request Response – QCA Irrigation Price Review 2013-17: RFI007 Central Lockyer, Clarendon Diversion Channel – Access Road response from Seqwater, 13 August 2012;

(f) SM Project Outline: Clarendon Diversion Channel – Access Road, Seqwater, undated

(g) Information Request Response – QCA Irrigation Price Review 2013-17: RFI036 Central Lockyer Valley, Clarendon Diversion Channel – Access Road response from Seqwater, 29 August 2012; and

(h) SM Project Outline: Clarendon Diversion Channel – Access Road, Seqwater, undated, updated.

Prudency

This project was identified as being necessary to access and operate the Clarendon Diversion Channel. The channel supplies water between Lake Clarendon and the Redbank Creek Pump Station. The channel allows water to be supplied in either direction.

The project is part of the Irrigation Infrastructure Renewal Projections 2013-14 to 2046-47 for the Lockyer Valley Tariff Group. As identified above, the project is not due to be implemented until 2022-23 and it is currently only at the concept phase. Subsequently whilst the level of documentation available for this project is minimal, it is in line with the current status of the project. 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.

The Clarendon Diversion Channel access road was constructed in approximately 1986, and hence is currently 26 years old. Based on this asset life, the road will be renewed when it is 36 years old.

Seqwater's standard useful asset life for roads and drainage is 30 years. The project renewal timing is slightly higher than Seqwater's standard useful asset life. Seqwater's standard asset refurbishment for roads for accessing bores is 5 to 12 years. No data is given for roads associated with other assets. SKM noted that patch maintenance has occurred; but has been minor, e.g., drainage clearing, or has been event based.

SKM considered that the useful asset life applied by Seqwater for this asset is reasonable and is in keeping with industry practice. SKM noted that the proposed project is not a complete renewal (i.e. replacement) of the road but rather a refurbishment of the existing road. A refurbishment of the existing road will require significantly less effort than a total renewal (i.e. replacement) of the road. For example, any ground works undertaken in the initial formation of the road are unlikely to be required to be undertaken again during a renewal.

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

No documented condition assessments were provided to SKM. A site visit was undertaken on the 17 August 2012. From inspection, the road was considered by SKM to be in a good condition and currently suitable for operating and maintaining the channel. As such SKM considered that the timing for renewal of this asset is appropriate and adequate for the intended purpose in the absence of better and more informed asset condition information.

On the basis that renewal of the access road is required to operate the Central Lockyer Valley WSS, that the timing of the works is considered accurate and that the scope of works is reasonable, the project was assessed as prudent.

Efficiency

This project is for the renewal of the access road and along both sides of the Clarendon Diversion Channel.

SKM questioned the need to renew the access road and along both sides of the channel. Based on SKM's recent site visit and from satellite imagery based terrain information, the main access seems to be along the northern edge of the channel. In addition, there are frequent crossing points of the channel, for example near siphons under the roads.

Whilst Seqwater agreed that one side of the channel is being used more frequently than the other, Seqwater is of the view that vehicular access to both sides of the channel is essential. This requirement was to enable channel embankment condition monitoring, maintenance and operational activities.

Seqwater identified that during the Validation and Planning phase of the project, the scope of the project will be further developed. The following expectations were identified:

(a) parts of the road that are used most frequently will attract more renewal effort;

(b) only sections that require renewal will be renewed but the effort required at these locations will be more extensive than is outlined in the initial cost estimate; and

(c) timing will be adjusted so that the works are undertaken when needed. Depending on the performance of the asset it may be deferred, brought forward or staged over a number of years.

SKM agreed with the above expectations, in particular, the further assessment of asset condition and the subsequent timing of the works.

No formal standards were used in the concept design of the access road. The minimum practical requirements include the capacity to allow access in all conditions and weather, and WHS compliance requires access to be reasonably safe for workers and contractors.

Seqwater's initial cost estimate is provided in Table 4.12.

Table 4.12: Clarendon Diversion Access Road – Seqwater's Initial Estimate

Items	*Sub-Items*	*Costs ($)*
Contract Costs		
Design	Civil	12,000
Procurement	Preparation of scope of work and RFQ	8,000
Supply and Install	Total road surface 37000m2: Rate for prelim grading, importing and placement of 50mm gravel and reforming - $2/m2	74,000
Sub-Total		**94,000**
Seqwater Internal Costs		
Work Supervision		14,000
PM Costs (15% of Contract Costs)		14,000
Sub-Total		**28,000**
	Total	**$122,000**

Source: Seqwater (undated).

Following confirmation of the overall budget, Seqwater provided an updated budget for the refurbishment of the access road. This budget breakdown is outlined below in Table 4.13.

Table 4.13: Clarendon Diversion Access Road – Seqwater's Revised Cost Estimate

Items	*Sub-Items*	*Costs ($)*
Contract Costs		
Design	Civil	10,000
Procurement	Preparation of scope of work and RFQ	9,000
Supply and Install	Total road surface 37000m2: Rate for prelim grading, importing and placement of 50mm gravel and reforming - $4/m2	140,000
Sub-Total		**159,000**
Seqwater Internal Costs		
Work Supervision		11,000
PM Costs (15% of Contract Costs)		23,850
Sub-Total		**34,850**
	Total	**$193,850**

Source: Seqwater(undated)

SKM undertook its own assessment of costs for the access road, as shown in Table 4.14.

Table 4.14: Clarendon Diversion Access Road – SKM Cost Estimate

Item	*Unit*	*Qty*	*Rate*	*Amount*
Establishment, disestablishment and traffic control		1	$10,000.00	$10,000
Grade and trim existing roadway surface and clean out table drains with motor grader	m	12,200	$5.00	$61,000
Supply, place and compact gravel surface to roadway using DTMR Class 2.2 material	m^3	1,830	$85.00	$155,550
Final Trim	m^2	36,600	$2.00	$73,200
Total				**$299,750**

Source: SKM (2012).

The cost estimate for this project is $299,750 based on a 50mm gravel pavement. SKM considered the rate used by Seqwater for the preliminary grading, importing and placement of 50mm gravel and reforming to be low. A comparison of Seqwater's and SKM's total cost estimates is provided in Table 4.15.

Table 4.15: Clarendon Diversion Access Road – Cost Comparisons

Component	*Seqwater Estimate ($)*	*SKM Estimate ($)*	*Difference (%)*
Design	10,000	15,000	50%
Procurement	9,000	15,000	67%
Supply and Install	140,000	299,750	114%
Seqwater Internal Costs	34,850	45,000	29%
Total	**$193,850**	**$374,750**	**93%**

Source: SKM (2012).

The SKM cost estimate for this project is $374,750, including Seqwater internal costs. This cost estimate is significantly higher than the Seqwater cost estimate. While SKM found the project to be efficient, it recommended that the costs are reviewed as part of the ongoing development of this project, including the use of condition assessment and options analysis to confirm the scope of works.

Conclusion

The project was assessed as prudent as the access road is required to operate the Central Lockyer Valley WSS, the timing of the works was considered adequate and the scope of works reasonable.

The project was assessed efficient as the scope of works is currently appropriate, although should be refined as part of the ongoing design process, the standards of works are consistent with industry practice and the revised project costs are low compared to prevailing market conditions.

Authority's Analysis

The Authority accepted SKM's analysis that the proposed project is prudent and efficient. Seqwater's revised cost estimate is substantially lower than SKM's estimate.

Item 5: Clarendon Diversion Trash Screens

Seqwater

This renewals item is scheduled for 2014-15 and thence every 5 years thereafter. The cost is estimated at $10,000 for each refurbishment, a total of $50,000 over the planning period.

Other Stakeholders

No stakeholders commented on this item.

Consultant's Review

Project Description

The Clarendon Diversion Trash Screens expenditure item involves the periodic refurbishment of the corrosion protection on the trash screens to ensure ongoing serviceability. The purpose of the trash screens is to protect the pumps within the Redbank Pump Station from damage arising from debris entering the pumps and to prevent the pump well from becoming fouled with debris. The Redbank Pump Station transfers water between the Redbank Creek and Lake Clarendon.

The refurbishment involves the removal of the screens from the pump well, preparation of the surface and application of a 2-pac epoxy paint. The project is a recurring project, occurring initially the 2014-15 financial year and then every five years, depending on condition assessments as assessed from time to time between planned refurbishments.

Project Status

Seqwater states that as the project is not to be carried out until 2014-15 in the first instance, and every five years thereafter, that the project is in the Concept and Feasibility phase of the Seqwater Asset Delivery Framework. SKM considered the current position of the project in the Seqwater Asset Delivery Framework as appropriate given the relatively low value and non-complex nature of the project.

For a project of this size ($10,000), SKM anticipated that validation and planning documentation would be produced in 2013-14 (that is, one year before implementation).

Documentation Provided

The documents used for this review are:

(a) 2013-14 Irrigation pricing – Submission to the QCA, Seqwater, April 2012;

(b) Irrigation Infrastructure Renewal Projections – 2013/14 to 2046/47 – Report on Methodology, Seqwater, April 2012;

(c) Central Lockyer Valley WSS– Network Service Plan, Seqwater, undated;

(d) Irrigation Infrastructure Renewal Projections – 2013/14 to 2046/47: Report – Central Lockyer Valley Tariff Group, Seqwater, April 2012;

(e) Information Request Response – QCA Irrigation Price Review 2013-17: RIF011 Central Lockyer, Clarendon Diversion Trash Screens, Seqwater, 12 August 2012;

(f) SM Project Outline: Clarendon Diversion Channel Inlet trash screens, Seqwater, undated;

(g) Asset Assessment Form: Clarendon Diversion Baulks and Trash Screens, Seqwater, 13 February 2012; and

(h) Information Request Response – QCA Irrigation Price Review 2013-17: RFI029 Clarendon Diversion Trash Screens, Seqwater, 27 August 2012.

Limited information has been provided on the Clarendon Diversion Trash Screens expenditure item, however as the project is in the Concept and Feasibility stage this is not unexpected.

Prudency

This project was identified as being necessary to operate the Central Lockyer Valley WSS. The trash screens protect the pumps from damage and prevent the pump well from becoming fouled with debris, which is good practice. Failure of the screens during pump operation may damage the pumps which could result in an inability to harvest water.

The Redbank Pump Station transfers water between the Redbank Creek and Lake Clarendon. Water is transported from Redbank Creek to Lake Clarendon in high rainfall events which result in the overtopping of the weirs along Lockyer Creek. Water is transported back to Redbank Creek from Lake Clarendon when the level in the Lockyer and Redbank Creeks has dropped. The trash screens are necessary for reliable operation of the Central Lockyer Valley WSS.

The nature of trash screen set-up, being submerged under water in a high flow river, is such that the periodic refurbishment and renewal of the trash screen is required and therefore necessary for the continued operation of the Central Lockyer Valley WSS.

The project was identified as part of the Irrigation Infrastructure Renewal Projections 2013-14 to 2046-47 for the Central Lockyer Valley Tariff Group. As identified above, the project is not due to be implemented, in the first instance, until 2014-15 and it is currently only at the concept phase.

Consequently, whilst the level of documentation available for this project is minimal, it is in line with the current status of the project. Seqwater indicated that a formal condition assessment and detailed options analysis is scheduled to be completed more contemporaneously with the expected date of planned refurbishment in the Validation and Planning phase of Seqwater's Asset Delivery Framework. SKM considered that the refurbishment of an asset based on the results of an adequate condition assessment and options analysis represent good industry practice.

The Clarendon Diversion Trash Screens were installed in 1993, and hence are currently 19 years old. Seqwater's standard useful asset life for trash screens in water pump stations has not yet been determined, but the standard useful asset life for trash racks in dams is 70 years. Seqwater's standard asset refurbishment for trash screens in water pump stations is 5 years, compared to 10 years for trash screens in dams.

Seqwater advised that refurbishment of the screens has not been undertaken since they were handed over from SunWater and that information regarding the prior maintenance history,

by SunWater, was not available. Based on industry experience SKM considered that a useful life of 30 years is appropriate for trash screens in water pump stations or channels, due to potentially high flow conditions and debris, and that a refurbishment period of 5 years is also appropriate and in keeping with industry practice.

Seqwater advised that the timing for the inspection and refurbishment, as required, of the trash screens is based on a frequency that allows for intervention before significant corrosion of the screens can develop. SKM considered that the useful asset life applied by Seqwater for this asset is reasonable and in keeping with industry practice. As such SKM considered that the timing for refurbishment of this asset is appropriate and adequate for the intended purpose.

The timing of the inspection and refurbishment, as required, of the trash screens is consistent with Seqwater's methodology. SKM reviewed Seqwater's asset management methodology and considered that the approach adopted is appropriate for the type of asset and that the refurbishment period timing is reasonable.

On the basis that refurbishment of the trash screens is required to operate the Central Lockyer Valley WSS, that the timing of the works is considered accurate and that the scope of works is reasonable, the project was assessed as prudent.

Efficiency

The scope of works, for each occurrence of the expenditure, is to remove the three trash screens, inspect and clean the screens, patch and paint the screens as required and reinstall the screens. Seqwater stated that the project scope of 'patch painting' has been determined based on experience in managing a fleet of approximately 70 sets of trash screens at dams, water treatment plants and pump stations and that it is considered the most likely scope based on the age, material and service environment of the screens and also draws on the operational staff's most recent knowledge of the screens condition.

As Seqwater has not specifically defined what 'patch painting' entails, SKM assumed the approach is consistent with AS/NZS 2312:2002 for refurbishment of painted steel infrastructure. This includes stripping the screens down to bare metal only in those areas that exhibit rust then applying primer and undercoat to those areas, then finally a top coat to the entire screen. Seqwater confirmed that this is in line with the intent of the project except that the 'final top coat will usually only be applied to the area that is patched with an overlap to an intact section of paintwork'.

Seqwater advised that no options analysis has been completed as yet as the project is in the Concept and Feasibility phase and will be completed in the Validation and Planning phase. Without an options analysis having been completed it was not possible to determine definitively that the refurbishment of the trash screens is the best means of achieving the desired outcome, however based on the current information the scope of works is considered to be adequate for the project.

From work previously undertaken, SKM considered that AS/NZS 2312:2002 is an appropriate basis for assessing the severity of corrosion on coated steel surfaces. This standard recommends refurbishment when greater than 2% of the surface coating has been damaged, exposing the steel surface. This amount of damage generally occurs within the 5 to 6 years after installation. SKM considered this approach to be appropriate and based on good engineering practice as defined in the standard.

Seqwater's cost estimate is detailed in Table 4.16.

Table 4.16: Clarendon Diversion Trash Screens – Seqwater Cost Estimate

Items	*Sub-Items*	*Costs ($)*
Contract Costs		
Design	Mechanical	500
Procurement	Preparation of scope of work and RFQ	500
Supply and Install	Removal, clean, patch paint as required and reinstallation of 3 x trash screens	6,500
	Crane hire, removal and replacement	1,000
Sub-Total		**8,500**
Seqwater Internal Costs		
Work Supervision		500
PM Costs (15% of Contract Costs)		1,000
Sub-Total		**1,500**
Total		**$10,000**

Source: Seqwater (undated).

Seqwater indicated that the budget is accurate to ± 30%. This level of accuracy is appropriate for a project in the Concept and Feasibility phase. Seqwater advised that the cost estimate was developed with regard to the experience of undertaking similar projects previously.

SKM estimated costs for the supply and installation for the refurbishment of the trash screens, based on industry experience. SKM expected the total overhead costs associated with the project to be up to 30% of the contract costs for a project with a value less than $100,000. SKM's estimate is provided and contrasted with Seqwater's cost estimate in Table 4.17.

Table 4.17: Clarendon Diversion Trash Screens – Cost Comparisons

Component	*Seqwater Estimate($)*	*SKM Estimate($)*	*Difference*
Design	500	531	6%
Procurement	500	531	6%
Supply and Install			
Removal, clean, patch paint as required and reinstallation of 3 x trash screens	6,500	7,350	13%
Crane hire, removal and replacement	1,000	1,500	50%
Seqwater Internal Costs	1,500	1,593	6%
Total	**$10,000**	**$11,505**	**15%**

Source: SKM (2012).

SKM assessed the allowance for design, procurement and Seqwater internal costs. While these were considered to be high compared to other Seqwater projects and standard industry practice, the overall costs were within 30% of the SKM's estimates and were therefore considered efficient.

Conclusion

The project was assessed as prudent as the refurbishment of the trash screens are required to operate the Central Lockyer Valley WSS, the timing of the works is considered appropriate and the scope of works is reasonable.

The project was assessed efficient as the scope of works is appropriate, the standards of works are consistent with industry practice and the revised project costs are consistent with SKM's estimate for such works.

Authority's Analysis

The Authority accepted SKM's analysis that the proposed project is prudent and efficient. The Authority noted that Seqwater's revised cost estimate is lower than SKM's estimate.

Item 6: Central Lockyer Valley Meter Replacements

Seqwater

Seqwater's business case in this regard outlines costs for replacing existing meters; moving meter locations to comply with WHS requirements; and modifying existing meter works to comply with the meter manufactures' specifications (to ensure accuracy.

This renewals item is scheduled in 3 phases:

(a) Phase 1 - for 2013-14 to 2014-15, compliance with WHS requirements ($264,000);

(b) Phase 2 - for 2015-16 to 2021-23, modifying existing meter works to comply with manufacturers' specifications to improve metering accuracy ($1,176,000); and

(c) Phase 3 - from 2022-23 onwards, replacement of meters from Phases 1 and 2 at the end of asset life (10 years) ($490,000).

Total cost is $1.93 million. These estimates represent a revision on the initial submission from Seqwater which proposed a total cost of $1.007 million.

Other Stakeholders

L. Brimblecombe (2012) submitted that when considering new meters, the appropriate standard needs to be considered. A $9,000 meter seems excessive compared to a $1,300 meter which although less accurate would only be so by a small amount.

Consultant's Review

Project Description

This review concerns the replacement of water meters within the Central Lockyer Valley WSS. This metering is required for management of water supplies, reporting and billing purposes. Seqwater has advised that they have two types of meters: river meters and groundwater meters in the Central Lockyer Valley WSS.

Project Status

The project is to be commenced in 2012-13 as a rolling program of renewals. In the Seqwater Asset Delivery Framework, the project is classified as pre-implementation, in the Validation and Planning stage. SKM considered the current position in the Seqwater Asset Delivery Framework as appropriate given the value and timing of this renewal project.

Documentation Provided

The documents used for this review are:

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

(b) Central Lockyer Valley WSS – Network Service Plan, Seqwater, undated;

(c) Irrigation Infrastructure Renewal Projections – 2013/14 to 2046/47: Report – Central Lockyer Valley Tariff Group, Seqwater, April 2012;

(d) Information Request Response – QCA Irrigation Price Review 2013-17: RIF032 Additional Projects, Seqwater, 29 August 2012;

(e) Business Case (Medium Projects) Irrigation Customer Meter Renewal, Seqwater, Version 1.0 8/06/12;

(f) Business Case (Medium Projects) Irrigation Customer Meter Renewal, Seqwater, Version 2.0 12/07/12;

(g) Information Request Response – QCA Irrigation Price Review 2013-17: RFI035 River Meters and Groundwater Meters, Seqwater, 29 August 2012;

(h) RFI035 Central Lockyer Valley WSS metered off-takes inspected (excel spreadsheet), Seqwater, undated;

(i) RFI035 Lower Lockyer Valley WSS metered off-takes inspected (excel spreadsheet), Seqwater, undated;

(j) RFI035 Warrill Valley WSS meter off-takes inspected (excel spreadsheet), Seqwater, undated;

(k) RFI035 Meters Purchase Order, Seqwater, February 2012; and

(l) RFI035 Meters Contractor Invoice, Hayes Welding and Fabrication, May 2012.

The provided documentation has been adequate to conduct an assessment of this project.

Prudency

The Central Lockyer Valley WSS IROL specifies the requirement to measure water taken by water users, for example, the Licensee must:

> *(a) Implement and maintain a water quantity monitoring program, in accordance with the DNRW [*now DNRM*] water monitoring procedures and protocols specified by the Chief Executive from time to time, which measures and records:*
>
> *(i) diversions of water by each customer of the Licensee; diversions to channel distribution systems; diversions to watercourses used for water distribution and drainage; aggregate use by water users from each channel distribution system; water use for each grouping of interim water allocation in SCHEDULE 2.1; and releases from distribution systems to supplement watercourses or for other purposes; on a quarterly basis.*

Therefore, in order to comply with these monitoring requirements Seqwater must install a working water meter for each active water user (customer). Seqwater must record actual water used through each meter.

In addition, Seqwater identified health and safety as a driver of cost. Seqwater identified the health and safety risks associated with the location of the meters on steep and uneven slopes. Many of the meters are installed low on stream banks. There is a high risk of slips, trips and falls as the ground is uneven, steep and often concealed by tall grass.

Meters required to be replaced due to high or extreme health and safety risks are prioritised. The business case identifies 20 meters to be replaced per year for the first 3 years of the programme in the Central Lockyer Valley WSS. Meters required to be replaced requiring a modification of the installation infrastructure to meet with manufacturer's recommendations are given a lower priority.

No information was provided on the current age of the assets to be replaced. Seqwater's standard useful asset life for water meters is 15 years (refer to Seqwater's Report on Methodology, Appendix C of SKM report). Seqwater's standard asset refurbishment for water meters is unspecified (refer to Seqwater's Report on Methodology, Appendix D of SKM report). In the provided business case, a 20-year useful asset life is assumed. SKM believed the standard asset life of 15 to 20 years to be reasonable and in keeping with industry practice.

SKM reviewed the outcomes of the condition assessment provided. The reviewed sites were allocated a condition score as follows:

(a) Condition 1 – as new;

(b) Condition 2 – requires maintenance to restore design service capability;

(c) Condition 3 – required refurbishment to restore design service capability;

(d) Condition 4 – beyond economic repair; and

(e) Condition 5 – asset has failed.

SKM noted that in the metering audit for the Central Lockyer Valley WSS, 468 meters were recorded. Of these, 56% were listed as being in use.

A summary of condition assessments of meters in the Central Lockyer Valley WSS is shown in Table 4.18.

Table 4.18: Central Lockyer Valley WSS – Meter Condition

Condition Rating	*Number of Meters*	*Number of Meters Listed as Being n Use*
Condition 1 – As new	0	0
Condition 2 – Requires maintenance to restore design service capability	1	1
Condition 3 – Required refurbishment to restore design service capability	76	52
Condition 4 – Beyond economic repair	339	199
Condition 5 – Asset has failed	52	16
Total	**468**	**268**

Source: SKM (2012).

The vast majority of meters (over 80%) are rated as condition 4 or 5, and therefore require replacement, as opposed to refurbishment. This percentage is similar for river and groundwater meters. Of the 33 channel meters, 31 are listed as condition 3, although as noted above, channel meters form the smallest percentage of all meters.

SKM visited a number of metering sites as part of this investigation. The site visits supported the need to replace the existing meters, including the need to reposition meters at locations that represent a health and safety risk to new locations that do not place operators at risk. The evidence also supported the need to provide an adequate pipework configuration to achieve the most accurate reading.

On the basis that the majority of meters are recorded as either not working or beyond economic repair, SKM supported the need to replace rather than refurbish the existing meters.

Timing and Number of Meters to be Replaced

SKM investigated the timing and number of meters to be replaced across all schemes. According to Seqwater's business case, a fleet of 700 active meters, or half of the total of 1,400 meters, are required to be replaced. SKM noted that Seqwater proposed to replace 775 meters across all schemes, but did not provide a justification for the additional 75 meters.

This may be due to an allowance for the fleet to increase over time as part of a re-uptake of water licences. However, this is not specifically stated by Seqwater and no justification was provided for this assumption.

In summary, SKM found that:

(a) for the first three years, 2012-13 to 2014-15, the proposed replacements at 95 meters per year (20 per year in Central Lockyer Valley) to meet WHS standards is prudent;

(b) for the seven years, 2015-16 to 2021-22, meter replacements at 70 per year (15 per year in Central Lockyer Valley) were considered prudent for the first six years, but not the final year; and

(c) for 2022-23 onwards, ongoing renewal at 70 per year (15 per year in Central Lockyer Valley) was considered only partially prudent, that is, meter replacement was not required for all years. On the basis that the fleet of at least 700 active water meters will have been replaced during the first 10 years of the program, and the useful asset life of the meters is 15 to 20 years, there should be no planned replacements until after these assets have passed their useful lives. SKM considered the renewal of meters from 2022-23 to 2027-28 not to be prudent.

Overall, SKM considered the meter replacement program to be partially prudent.

Scope of Works

Seqwater has considered two main options for type of meter - the replacement of the existing meters with a similar mechanical meter and the replacement of the meters with magflow meters. Both meters require minimum pipework configuration standards, for example, a number of pipe lengths both upstream and downstream of the meter to reduce the effects of turbulent flow within the pipeline.

Seqwater calculated the NPV costs over 20 years for the two meter types as follows: magflow $8,380; and Mechanical Meter $5,650. These costs include initial installation and ongoing maintenance costs for the life of the meter.

SKM investigated whether a magflow meter would be more appropriate for high usage customers, on the basis that a more reliable meter may increase revenue.

Seqwater provided the following simplified analysis of the annual usage in 2010-11 in the Central Lockyer Valley WSS. It is noted that a recorded usage of 0ML may indicate the meter does not work rather than no water is provided. Table 4.19 refers.

Table 4.19: Central Lockyer Valley WSS Estimated 2010-11 Water Use Revenues

Usage	*0ML*	*0-10ML*	*10-50ML*	*50-100ML*	*>100ML*
Number of Customers	277	78	93	17	3
Part B Revenue per Customer	$0	$160 (5ML)	$960 (10ML)	$2,400 (75ML)	$6,400 (200ML)

Source: SKM (2012).

Customers in the Central Lockyer Valley WSS were [up to 30 June 2013] required to pay minimum charges regardless of water usage. This is equal to approximately 8ML usage

($258). SKM found that customers owning approximately 350 of the 468 meters in the scheme paid a bill based on minimum charges rather than water usage.

In addition, Seqwater stated that reliable information regarding high use meters is not available. Usage varies over time depending on water availability and individual operational decisions by the irrigators. Usage is not necessarily linked to licence volumes as the irrigator can trade water with other licence holders. A meter that has high usage now may not be a high-use meter in the future.

SKM concluded that installation of magflow meters on these grounds is not justified as there are very few high use irrigators and the usage changes frequently. SKM therefore recommended the lower cost mechanical meters.

Efficiency

SKM estimated the costs of a single meter installation based on Seqwater's proposed standard installation and compared this with Seqwater's estimate of a single meter.

The comparison is shown in Table 4.20.

Table 4.20: Comparison of Meter Installation Costs

Item	*Seqwater ($)*	*SKM ($)*	*Difference*
Parts – new flow meter	600	875	46%
Contractors - installation	4,000	5,700	43%
Subtotal	**4,600**	**6,575**	**43%**
Planning	250		
Community and landholder consultation	450		
Site inspections	450		
Evaluations and contractor selection	150		
Flow meter procurement	200		
Administration	200		
Contractor management (WH&S, consultations and site visits)	150		
Commissioning	150		
Management costs – Sub total	**2,000**	**1,600**	**(20%)**
Total	**$6,600**	**$8,175**	**24%**

Source: SKM (2012).

SKM considered that the lower cost proposed by Seqwater could be explained by the bulk purchasing of meters and the cost savings from appointing a single contractor on the overall project. SKM considered Seqwater's proposed cost to be efficient.

SKM's Conclusion

SKM concluded that the project is partially prudent. Given that the type of meter and installation costs are considered reasonable, SKM considered the project costs per meter to be efficient.

A comparison of Seqwater's proposed costs and SKM's revised costs for Central Lockyer Valley WSS are outlined below in Table 4.21.

Table 4.21: SKM's Estimated Partially Prudent and Efficient Metering Costs Compared (Real $'000)

	2013-14 to 2014-15	*2015-16 to 2021-22*	*2022-23 to 2035-36*	*Total*
Seqwater Proposed Costs	264	1,176	490	1,930
SKM Revised Costs	264	997	317	1,578

Source: SKM (2012).

Authority's Analysis

The Authority noted the outcome of the SKM review that expenditure associated with Item 6: Meter Replacements efficient in terms of the costs per meter and expenditure incurred in 2013-14 and 2014-15. However, SKM noted issues associated with the proposed timing of replacement and the number of meters to be replaced in later years. The expenditure is therefore partially prudent in these later years.

The Authority, based on the SKM analysis, concluded that the expenditure associated with metering for the Central Lockyer Valley WSS be adopted as outlined, above, in Table 4.21.

Submissions Received from Stakeholders on the Draft Report

Seqwater (2013e) submitted that it is undertaking meter replacements due to safety considerations and to ensure meters meet manufacturer specifications. In certain circumstances Seqwater will replace meters that are five years old if they are non-compliant for safety, accuracy or other reasons.

Seqwater noted that SKM disagreed with the shorter (10 year) meter lives Seqwater ascribed to meters. The longer (15 year) lives recommended by SKM are consistent with meters operating in reticulated water systems where the quality of the water is higher than the quality of raw water pumped from rivers and streams for irrigation purposes.

Seqwater submitted that irrigation meter life is shorter than urban meters as they are subjected to raw, unfiltered water that has a content high in sand and organic matter dramatically shortens meter lives. After five to six years operating under these conditions, the accuracy of irrigation meters deteriorates.

B. Sippel (2013) submitted that meters in good working condition should not be replaced. The savings could be spent on pressurising the Morton Vale Pipeline which is considered possible at a reasonable cost.

Authority's Response to Submissions Received on the Draft Report

The Authority notes Seqwater's responses and that some such meters may be replaced within SKM's recommended 15-year life, which is reasonable where justified by condition

assessment or a least-cost approach. Some meters, however, may not need replacing every 15 years, but can be maintained for a longer period where it is cost effective and compliant to do so (that is, meters remain accurate and safe). The Authority continues to support an average 15-year life and notes that Seqwater must continue to demonstrate that costs are prudent and efficient, for such costs to be included in future prices.

Seqwater's metering business case does not aim to replace meters in perfectly good working order. In certain circumstances (referred to Seqwater's submission), Seqwater will repair or replace these meters for reasons including non-compliance with WHS legislation and/or manufactures guidelines and will take a least-cost approach. Half of the irrigation meters will be replaced under the program.

As the Authority has not identified any grounds to alter its Draft Report approach, the recommendation to accept SKM's findings is maintained.

The matter of pressurising the Pipeline is an operational matter which has been referred to Seqwater. Any progress on this item would be a matter for Seqwater to decide, but in consultation with irrigators. The Authority notes that such an option would involve additional capital and operating costs which are likely to be allocated across all customers of the Morton Vale Pipeline tariff group.

Item 7: Clarendon Dam Earthworks

Seqwater

This renewals item is scheduled for 2020 at a cost of $50,000.

Other Stakeholders

No stakeholders commented on this item.

Consultant's Review

As noted above (Item 1), SKM has reviewed a similar project relating to replacement of riprap in the Clarendon Dam. This involved a $312,000 expenditure over a six-year period.

SKM considered whether the conclusions could be applied to the similar project involving a $50,000 expenditure on earthworks formation at Clarendon Dam in 2020.

SKM considered however that the conclusions could not be applied to this project as it was unclear whether the works included or excluded renewal of riprap.

SKM therefore considered that there was insufficient information to conclude on this project.

Authority's Analysis

The Authority accepted SKM's conclusion, noting that there is a significant difference between the scales of the projects.

Accordingly, the Authority treated this item as unsampled for the purposes of the review, and applied a 13% generic saving.

Item 8: Clarendon Diversion Control Equipment

Seqwater

This renewals item involves expenditure of $137,000 in 2029 and $26,000 in 2014 on Clarendon Diversion control equipment.

Other Stakeholders

No stakeholders commented on this item.

Consultant's Review

SKM reviewed a similar item for Clarendon Diversion (Item 2 above), involving expenditure of $174,000 in 2029. This was found to be prudent and efficient. SKM recommended that the conclusions could be applied to other planned expenditure on control equipment in the Clarendon Diversion - $137,000 in 2029 and $26,000 in 2014.

Authority's Analysis

The Authority accepted SKM's conclusion that the project is deemed to be prudent and efficient.

Item 9: Clarendon Dam and Diversion – Access Roads and Turnouts

Seqwater

This renewals item involves expenditure of $119,000 for various road access projects over a number of years, detailed as shown in Table 4.22 below.

Other Stakeholders

No stakeholders commented on this item.

Consultant's Review

SKM reviewed one Clarendon Diversion access road project (Item 3 above) and found the expenditure to be prudent and efficient.

SKM indicated that these conclusions could be applied to other road-related projects in the Central Lockyer Valley WSS, totalling $119,000. These are listed in Table 4.22.

Table 4.22: Central Lockyer Valley Road Projects

Location	*Item*	*Year(s)*	*Total Cost ($)*	*Conclusion*
Clarendon Diversion	Access road - refurbishment	2016, 2021, 2026, 2031 & 2036	50,000	Prudent and efficient
Clarendon Diversion	Access road to weir - replacement	2024	24,000	Prudent and efficient
Clarendon Dam	Access roads refurbishment	2024	20,000	Prudent and efficient
Clarendon Dam	Turnouts - refurbishment	2016, 2026, 2036	15,000	Prudent and efficient
Clarendon Diversion	Access Road to weir - refurbishment	2020, 2035	10,000	Prudent and efficient
Total			**$119,000**	

Source: SKM (2012).

Authority's Analysis

The Authority accepted SKM's conclusion that the road projects are deemed to be prudent and efficient. The Authority notes that the corrected total cost amount is $119,000 rather than $129,000 noted in the Draft Report.

Item 10: Clarendon Dam Telemetry

Seqwater

This renewals item is scheduled for 2022 and again in 2032 at a total cost of $70,000.

Other Stakeholders

No stakeholders commented on this item.

Consultant's Review

SKM reviewed similar proposed expenditure in the Logan River WSS for the Bromelton Weir. This project also involved a total expenditure of $70,000 in 2022 and in 2032.

The need for this project at Bromelton Weir was determined as required to fulfil the regulatory obligations as specified in the IROL.

Seqwater's standard useful asset life for telemetry components and level measurement equipment is 10 years. In the absence of any determination for this SKM believed the standard asset life, which is in keeping with industry standards and hence appropriate, should be used.

SKM indicated that this type of equipment can normally be expected to reach obsolescence after approximately 10 years service, beyond which it can be expected to suffer a reduction in reliability due to an increased component failure rate and a lack of service support. In some cases the equipment life may be extended. However, in SKM's experience, 10 years can be considered typical. On this basis the timing of the asset replacement was considered appropriate.

Telemetry equipment is required for the transmission of water levels to Seqwater central locations and for this information to be made continuously available to stakeholders via the internet. Seqwater has chosen a simple radio link (with battery back-up) to achieve this. Alternatives would include connection to a telephone landline (not yet available at Bromelton Weir) but this would be susceptible to washout during floods. Alternatively a microwave link could be used but this would require expensive towers to achieve the "line-of-sight" links needed for repeater stations.

SKM considered this method of telemetry selected by Seqwater to be appropriate for the application.

The proposed works will be a relatively straightforward process involving like-for-like direct replacement of existing equipment with a system of similar capability.

SKM estimated a cost of $39,700 compared to Seqwater's estimate of $35,000, for each installation at Bromelton Weir. Overall, SKM considered the expenditure prudent and efficient.

In considering the application of the Bromelton Weir results to Clarendon Dam, SKM recommended that if Seqwater had followed the same process for other like projects, the findings may be applied.

Authority's Analysis

The Authority noted that the telemetry project for Clarendon Dam had the same cost and timing as for Bromelton Weir. The Authority accepted that the expenditure is prudent and efficient.

Item 11: Central Lockyer Valley Observation Bores

Seqwater

This renewals item is scheduled for 2019, 2024, 2029 and 2034 for a total cost of $200,000.

Other Stakeholders

No stakeholders commented on this item.

Consultant's Review

SKM reviewed similar proposed expenditure in the Lower Lockyer Valley WSS. This project entailed expenditure of a total of $344,000 over the same time period as in Central Lockyer Valley WSS.

The bores are used to monitor water levels in the aquifers and model the ground water within the relevant WSS areas. There is significant interaction between ground water and surface water in the area and forward planning regarding ground water entitlements is required to consider the impact on established surface water entitlements. The Ground Water Model owned and managed by DNRM, is the means by which these impacts are assessed. The bores are read and the resulting data managed by the DNRM.

In the Lower Lockyer Valley WSS, the expenditure involved renewal of 43 observation bores, 11 bores every five years commencing in 2018-19. The observation bores in the Lower Lockyer Valley WSS were installed over a period of time. The renewal of the bores is based on a standard useful asset life of 50 years and does not take into account condition of the bores.

In response to SKM's request for information, regarding the ownership of the bores and use of data, Seqwater stated that they agree that DNRM may be the appropriate owner of the bores, ground water extractions do impact surface water availability in the water supply scheme and that the information is not used operationally by Seqwater in the Lower Lockyer Valley WSS.

In summary, the renewal of the observation bores is not necessary to operate the Lower Lockyer Valley WSS and the project to replace the bores has been assessed as not prudent. SKM nonetheless reviewed the efficiency of the proposed expenditure. SKM's estimated cost per bore of $6,759 was lower but within a +/-30% range of Seqwater's estimate of $8,000 per bore.

In applying the results to Central Lockyer Valley WSS, SKM noted that Observation Boreholes are required under the IROL. Given this, and on the basis of the available information, SKM considered that the proposed expenditure for the Central Lockyer Valley projects is prudent. Assuming that the same method was used to estimate costs, SKM considered that expenditure on observation bores in the Central Lockyer Valley WSS is both prudent and efficient.

Authority's Analysis

The Authority accepted that the expenditure is prudent and efficient.

Item 12: Air Valves - Lake Dyer

Seqwater

The renewals item is for the refurbishment of air valves at Lake Dyer in 2014 and 2034 at a total cost of $12,000.

Other Stakeholders

No other stakeholders provided comment regarding this item.

Consultant's Review

SKM reviewed proposed replacement costs for air valves in the Calico Creek channel and Pie Creek main channel in the Mary Valley WSS. This involved replacement of 26 air valves along an asbestos cement pipe to assist in protecting the pipe against collapse and to facilitate efficient operation, at a total cost of $269,000 in 2022-23. As this replacement project was of a different nature to the refurbishment of air valves at Lake Dyer, SKM considered that the findings could not be applied.

Authority's Analysis

The Authority accepted SKM's conclusion that there is insufficient information to assess the expenditure on Lake Dyer air valves and is treated as an unsampled project, that is, a 13% generic saving was applied.

Item 13: Morton Vale Meter Replacements

Draft Report

Stakeholder Submissions

Seqwater submitted that expenditure of, $119,000 in the 2015-16 to 2021-22 period and $42,000 in later years is required to replace water meters in the Morton Vale system.

No other stakeholders made comment regarding this item.

Consultant's Review

SKM reviewed the metering requirements in the Central Lockyer Valley and Mary Valley WSSs. The results of this review were considered for application to Morton Vale Pipeline. As noted above, SKM found replacement costs to be prudent but not efficient.

Based on the analysis as outlined above in Item 6, SKM recommended that meter replacement costs of $101,000 in the 2015-16 to 2021-22 period and $29,000 for later years should be included.

Authority's Analysis

The Authority accepted SKM's conclusions.

Item 14: Morton Vale Trash Screens

Seqwater

This renewals item is scheduled for 2015 at a cost of $18,000.

Other Stakeholders

No stakeholders commented on this item.

Consultant's Review

SKM considered whether it is appropriate to apply the conclusions in regard to Clarendon Diversion trash screens to the Morton Vale Pipeline reticulation trash screens.

As both projects were refurbishment projects, and on the basis that Seqwater has followed a similar process in estimating costs, SKM considered that the additional project is prudent and efficient.

Authority's Analysis

The Authority accepted SKM's recommendation that the Morton Vale Pipeline reticulation trash screens expenditure is prudent and efficient.

Conclusion

Draft Report

Sampled Items

In summary, six items for the Central Lockyer Valley were sampled for detailed review. Of these five were found to be prudent and efficient. Sampled items are listed in Table 4.24.

For another item (Item 6: Central Lockyer Valley Meter Replacement), although the findings of SKM's review were that the expenditure is only partially prudent, costs were considered efficient on a per meter basis. Accordingly, SKM's revised cost estimates have been adopted.

For Central Lockyer Valley, reviews of similar items in other schemes were considered to be applicable to a further six items (Item 7 to Item 12). Of these, four items were considered to be prudent and efficient on the basis of reviews of similar items in other schemes.

However, for two of these items (Clarendon Dam Earthworks Formation and Lake Dyer Air Valves) it was considered that the results could not be applied. These two items, therefore, were categorised as non-sampled items and subject to the appropriate implied cost saving (see below).

The findings for Item 6: Central Lockyer Valley Meter Replacement were considered applicable to Item 13: Morton Vale Meter Replacement. Accordingly, this item was considered partially prudent with SKM's revised cost estimates being adopted.

The Item 14: Morton Vale Trash Screens was considered prudent and efficient on the basis of the results found for a similar item – that is, the prudent and efficient expenditure associated with the Clarendon Diversion trash screens.

Non-Sampled Forecast Renewals Expenditure

As discussed in Volume 1, the Authority did not review all past or forecast renewals expenditure for prudency and efficiency as Seqwater forecast total renewals expenditure of $56 million (about 500 forecast renewals projects), over the Authority's recommended 20-year planning period. It was therefore not practicable, nor desirable given the potential costs involved, to assess the prudency and efficiency of each planned expenditure item.

The direct (non-metering) forecast renewals cost savings identified by SKM are summarised in Table 4.23.

Table 4.23: 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: SKM (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 reviews identified systemic errors in Seqwater's renewals expenditure forecasting approach. 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, results in about a 13% 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.

Final Report

In total, the Authority recommended the direct renewals expenditure be adjusted as shown below in Table 4.24**.**

Aside from the correction to Item 9 (further above), the findings on sampled items are unchanged since the Draft Report**.**

Table 5.24: Review of Forecast (Direct) Renewals Expenditure 2013-36 (Real $)

Item	*Year*	*Seqwater*	*Authority's Findings*	*Recommended*
Sampled Items – Central Lockyer Valley				
1. Clarendon Dam Embankment - Riprap	2013-14 to 2018-19	312,000	Prudent and efficient	312,000
2. Clarendon Diversion Control Equipment	2028-29	174,000	Prudent and efficient	174,000
3. Gauging Stations	2022-23 &2032-33	120,000[1] (143,400)	Prudent and efficient	143,400
4. Clarendon Diversion Access Road	2022-23	192,000[2] (193,850)	Prudent and efficient	193,850
5. Clarendon Diversion Trash Screens	2014-15, thereafter 5-yearly	50,000	Prudent and efficient	50,000
6. Meter Replacement	2013-14 to 2014-15	264,000	Prudent and efficient	264,000
	2015-16 to 2021-22	1,176,000	Partially Prudent	997,000
	2022-23 to 2035-36	490,000	Partially prudent	317,000
Results Applied from Other Reviews – Central Lockyer Valley				
7. Clarendon Dam Earthworks Formation	2020	50,000	Results could not be applied to assess prudency or efficiency - 13% saving applied	43,500

Item	Year	Seqwater	Authority's Findings	Recommended
8. Clarendon Diversion Control Equipment	2029	137,000	Prudent and efficient	137,000
	2014	26,000	Prudent and efficient	26,000
9. Clarendon (Dam and Diversion) – access roads and turnouts	various	119,000	Prudent and efficient	119,000
10. Clarendon Dam Telemetry	2022 & 2032	70, 000	Prudent and efficient	70,000
11. Observation bores	2019, 2024, 2029 & 2034	200,000	Prudent and efficient	200,000
12. Lake Dyer air valves	2014 & 2034	12,000	Results could not be applied to assess prudency or efficiency - 13% saving applied	10,440
Results Applied from Other Reviews – Morton Vale Pipeline				
13. Meter Replacement	2015-16 to 2021-22	119,000	Partially prudent	101,000
	2022-23 to 2035-36	42,000	Partially prudent	29,000
14. Trash Screens	2015	18,000	Prudent and efficient	18,000
Non-Sampled Items				13% reduction applied

Source: Seqwater (2012at) and QCA (2012). Note: 1. Seqwater initially submitted an amount of $120,000 but revised its estimate to $143,400. 2. Seqwater initially submitted an amount of $192,000 but later revised its estimate to $193,850.

5.4 Seqwater's Consultation with Customers and Reporting

Draft Report

Stakeholder Submissions

Seqwater made no submission in regard to stakeholder consultation.

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 [including an options analysis].

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 [including options analysis] 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 proposed that the annual costs for renewals options analysis would be $4,182 for the Central Lockyer Valley tariff group and $16,730 for Morton Vale Pipeline tariff group.

In addition, a cost of $3,430 would be incurred to develop NSPs each year and $3,570 to establish and support a scheme advisory committee for the scheme as a whole.

QFF (2013b) submitted that, in response to Seqwater's estimated costs:

(a) $7,000 for annual NSP reviews and scheme advisory committees (for both tariff groups) is supported; and

(b) although $16,730 for renewals analysis for Morton Vale Pipeline tariff group is not supported, Seqwater should provide further advice on the need for any future renewals analysis.

Central Lockyer Valley WSS representatives (2013) submitted that DNRM, Seqwater and irrigators must engage in planning and management to achieve reductions in groundwater extraction, reduce costs through local management and facilitate farm productivity.

The representatives supported the proposal that Seqwater provide annual NSPs and for a scheme advisory committee to be established. However, they did not accept Seqwater's proposed amount for renewals options analysis, suggesting instead this be dealt with in consultation with Morton Vale Pipeline customers.

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 annually in NSPs.

During consultations (January 2013), irrigators indicated a low level of interest in increased consultation as they are able to discuss any issues of concern with the local Seqwater operations manager.

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.

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 recommended 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 the irrigation advisory committee.

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 Lockyer Valley WSS and is treated as a fixed irrigation only direct bulk (operating)

cost. Morton Vale Pipeline customers will be allocated a portion of this cost through the bulk fixed charge (Part A).

The Authority notes QFF's support for annual NSP reviews and a scheme advisory committee. The precise details of consultation for each WSS should be decided by Seqwater in consultation with irrigators. In general, it is considered the benefits of consultation will justify the relatively small cost.

5.5 Allocation of Headworks Renewals Costs

Previous Review

For the 2006-11 price path, the renewals costs for the Central Lockyer Valley bulk water infrastructure were apportioned between priority groups using converted nominal water allocations. The conversion to MP WAE for the Central Lockyer Valley WSS was determined by a WPCF of 2.5:1 - that is, one ML of HP WAE was considered equivalent to 2.5 ML of MP WAE.

Draft Report

Stakeholder Submissions

Seqwater

Seqwater submitted that in the Central Lockyer Valley WSS, there are four entitlement types (High, High A, High B and medium). It holds 184ML of HP WAE in the form of distribution losses, while irrigators hold the vast majority of the remaining WAE. The 2006 pricing review treated all irrigation WAE types the same for pricing purposes – for example, the irrigation customer WAE totalled 16,372ML in the Tier 1 report for Central Lockyer Valley and Morton Vale Pipeline tariff groups. This is comparable to the 16,331ML set out in above.

In addition they noted that the 2006 review assigned 99.8% of costs to the irrigation sector, which effectively meant High A, High B and medium were treated the same. Seqwater has not proposed to move from the previous arrangement, particularly given the underlying resource management arrangements are yet to be set by DNRM, codified in a final ROP. For example, water sharing rules are yet to be determined for the majority of WAE in the scheme, making any assessment of relative difference problematic.[1]

Seqwater submitted that the 184ML of High Priority WAE it holds is immaterial (1.1%) to the total WAE in the scheme, and Seqwater does not believe a HUF for the scheme is justified nor would add to the accuracy of the pricing outcomes. Instead, Seqwater proposed that nominal WAE % are applied in this scheme until such time as WAE are formalised, which means that non-Seqwater WAE holders account for 98.9% of lower bound costs.

Other Stakeholders

No other stakeholders provided comment regarding this topic.

Authority's Analysis

The Authority noted that the Central Lockyer Valley WAE includes very little HP WAE, the small volume of HP WAE is for distribution losses in the Morton Vale Pipeline and that the ROP is yet to be finalised. The Morton Vale Pipeline system is 100% irrigation.

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

On this basis, the application of a HUF methodology rather than a simple allocation according to WAE results in an immaterial difference. The Authority therefore allocated renewals costs on the basis of nominal WAE. The issue can be revisited once the ROP is completed and WAE finalised.

Under the proposed approach of allocating costs by WAE, MP irrigators will now pay 98.9% of the cost of renewals whereas previously MP irrigators paid 96.5%.

Submissions Received from Stakeholders on the Draft Report

Seqwater (2013a) supported the Authority's Draft Report approach.

Authority's Response to Submissions Received on the Draft Report

The Authority proposes no change to its Draft Report recommendations.

5.6 Calculating the Renewals Annuity

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

For the Central Lockyer Valley WSS, the Draft and Final recommended renewals annuities for the 2013-17 regulatory period are shown in Table 4.25. The renewals annuity for 2006-13 is also presented for comparison.

It was noted that the renewals annuity for Morton Vale Pipeline is a negative value. This means that the interest earnings from the ARR are sufficient to offset renewals requirements, and the offset is applied to overall costs for the scheme.

The change in renewals annuities is due to a change in the Weighted Average Cost of Capital (WACC) rate used to determine the annuity, from 5.86% to 6.2% (see Volume 1).

Table 5.25: Central Lockyer Valley WSS Renewals Annuity (Nominal $)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Central Lockyer Valley											
Seqwater (April NSP)	**399,401**	**352,644**	**577,377**	**480,067**	**481,011**	**477,762**	**489,188**	**136,623**	**142,813**	**146,639**	**149,847**
Seqwater (November NSP)	**71,097**	**66,003**	**85,741**	**83,396**	**85,644**	**81,202**	**83,239**	**300,481**	**304,505**	**306,616**	**308,303**
Authority (Draft)											
High Priority	-	-	-	-	-	-	-	0	0	0	0
Medium Priority	-	-	-	-	-	-	-	208,981	211,687	211,941	211,644
Distribution Losses	-	-	-	-	-	-	-	1,345	1,372	1,371	1,363
Total Authority	-	-	-	-	-	-	-	**210,327**	**213,059**	**213,312**	**213,007**
Irrigation Only	-	-	-	-	-	-	-	**208,981**	**211,687**	**211,941**	**211.644**
Authority (Final)											
High Priority								0	0	0	0
Medium Priority								210,094	213,122	213,530	213,403
Distribution Losses								1,346	1,376	1,376	1,369
Total Authority								**211,440**	**214,498**	**214,905**	**214,772**
Irrigation Only								**210,094**	**213,122**	**213,530**	**213,403**
Morton Vale Pipeline											
Seqwater, (April NSP)	**292,553**	**261,005**	**393,856**	**338,632**	**268,869**	**323,302**	**358,467**	**(27,223)**	**(26,764)**	**(26,286)**	**(25,788)**
Seqwater (November NSP)	**61,178**	**53,942**	**63,852**	**63,241**	**51,770**	**69,183**	**73,236**	**(84,557)**	**(84,528)**	**(84,497)**	**(84,464)**
Total Authority (Draft)	-	-	-	-	-	-	-	**(20,085)**	**(19,714)**	**(19,344)**	**(18,975)**
Irrigation Only	-	-	-	-	-	-	-	**(20,085)**	**(19,714)**	**(19,344)**	**(18,975)**
Total Authority (Final)								**(21,011)**	**(20,659)**	**(20,307)**	**(19,956)**
Irrigation Only								**(21,011)**	**(20,659)**	**(20,307)**	**(19,956)**

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

6. OPERATING COSTS

6.1 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 (for a tariff group) between different priority WAEs (where they exist);

(e) the most suitable cost escalation rates; and

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

6.2 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.

For the 2006-11 price paths, Indec identified annual cost savings of between $3.8 million and $5.5 million across all SunWater schemes (2010-11 dollars), or 7.5% to 9.9% of total annual costs, which were to be achieved during the 2006-11 price paths (SunWater 2006a).

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 to make a comparison between total forecast and historical operating expenditures.

Similarly, Seqwater considered that the lower bound cost benchmarks developed for the 2006 price review by SunWater are not directly comparable to Seqwater's historic costs or forecasts for the 2013-17 regulatory period. In particular, the published SunWater cost information:

(a) does not disaggregate operating costs for each tariff group within schemes where relevant - that is, Morton Vale Pipeline costs were incorporated into other scheme cost estimates and not separately identified;

(b) provides aggregate operations, maintenance and administration data, with no break down between direct and non-direct costs; and

(c) applies a productivity adjustment to proposed lower bound costs, but does not identify the adjustment applicable to operating expenditure.

Moreover, these lower bound costs were developed more than six years ago under very different conditions. Seqwater submitted that, while comparisons with the 2006 benchmarks may be of interest where data is disaggregated, there is little value in attempting to explain departures from the 2006 data since Seqwater provided no input to these forecasts and did not have the financial systems to gather and report this data due to the circumstances surrounding its formation.

Other Stakeholders

There were no other stakeholder comments in respect of Seqwater's past cost efficiency from stakeholders in the Central Lockyer Valley WSS.

Authority's Analysis

The Authority acknowledged Seqwater's view that the lower bound cost benchmarks developed for the 2006 price review by SunWater are not directly comparable to Seqwater's forecasts for the current 2013-17 regulated price review.

The Authority, nevertheless, considered that the relationship between the operating costs incurred by Seqwater in its irrigation schemes in more recent years and the derivation of its 2012-13 budgets should be explicitly analysed. In particular, the Authority noted the efficiency targets imposed by the Minister for Energy and Water Supply for the 2012-13 Grid Service Charges (GSCs).

The lower bound cost benchmarks developed for the 2006 price review by SunWater are not directly comparable to either Seqwater's historic costs, or its 2012-13 budget and forecasts for the current 2013-17 regulated price review.

Final Report

The Authority received no submissions in regard to historical costs and proposes no change to the Draft Report.

For information, historical forecast costs and actual costs (where available) are provided in Table 5.1.

Table 5.1: Actual and Forecast Total Operating Expenditure Central Lockyer Valley WSS 2006-11 (Nominal $)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*
Central Lockyer Valley					
Forecast	899,310	860,307	1,141,825	1,073,037	910,104
Actual	877,939	540,714	n.a.	n.a.	n.a.
Variance	(21,371)	(319,593)	n.a.	n.a.	n.a.
Morton Vale					
Forecast	48,415	46,315	61,471	57,768	48,996
Actual	48,678	31,202	n.a.	n.a.	n.a.
Variance	263	(15,113)	n.a.	n.a.	n.a.

Source: SunWater (2006b), Seqwater (2012s) and Seqwater (2012ba).

6.3 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, WHS 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);

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

  (iii) 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. No rates are identified for Central Lockyer Valley WSS; 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 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[2];

(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 operations costs are classified by type of expenditure and comprise:

(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;

(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 (2012aj) submitted forecast total operating costs by activity in Central Lockyer Valley (all sectors) and Morton Vale Pipeline 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.

[2] 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).

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 Authority.

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 previously reviewed by the Authority 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 Lockyer Valley 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 2012d); and

(b) a version in November 2012 (Seqwater 2012am) with revised operating costs compiled in response to the Authority's review of GSCs, 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 and Table 5.2 refer).

These data show that Central Lockyer Valley WSS operating costs were significantly reduced in the November revision, while Morton Vale Pipeline costs were increased. This reflects a re-allocation of costs such as direct labour, materials and repairs and maintenance to the relevant scheme components. A major source of the discrepancy in the April NSP was the erroneous inclusion of Mount Crosby repairs and maintenance costs in the Central Lockyer Valley WSS. Details are provided in the Authority's review of sampled items (Item 1) below.

Table 5.2: Seqwater's Forecast Operating Costs for the 2012-13 Base Year – Central Lockyer Valley (Nominal $)

	April NSP	*November NSP*	*Variance*
Direct Operating Costs			
Operations			
Labour	165,826	127,838	(37,988)
Contractors	0	0	0
Materials	42,270	12,126	(30,144)
Electricity	103,000	103,000	0
Other	1,000	1,000	0
Sub-total	**312,096**	**243,964**	**(68,132)**
Repairs and Maintenance			
Planned	308,549	108,829	(199,720)
Unplanned	126,027	44,451	(81,576)
Sub-total	**434,576**	**153,280**	**(281,296)**
Dam Safety	0	0	0
Rates	0	0	0
Total Direct Operating Costs	**746,672**	**397,244**	**(349,428)**
Non-Direct Operating Costs			
Operations			
Water Delivery	79,977	40,878	(39,100)
Asset Delivery	35,706	20,136	(15,570)
Corporate	285,744	126,225	(159,518)
Other	24,356	3,478	(20,877)
Sub-total	**425,782**	**190,717**	**(235,065)**
Non-Infrastructure	35,578	19,572	(16,006)
Insurance	161,263	142,721	(18,542)
Working Capital	11,617	11,617	0
Total Non-Direct Operating Costs	**634,240**	**364,627**	**(269,613)**
Total Operating Costs	**1,380,912**	**761,871**	**(619,041)**

Source: Seqwater (2012d) and Seqwater (2012am).

Table 5.3: Seqwater's Forecast Operating Costs for the 2012-13 Base Year – Morton Vale Pipeline (Nominal $)

	April NSP	*November NSP*	*Variance*
Direct Operating Costs			
Operations			
Labour	23,996	42,917	18,921
Contractors	0	0	0
Materials	0	0	0
Electricity	0	0	0
Other	0	0	0
Sub-total	**23,996**	**42,917**	**18,921**
Repairs and Maintenance			
Planned	355	7,455	7,100
Unplanned	145	3,045	2,900
Sub-total	**500**	**10,500**	**10,000**
Dam Safety	0	0	0
Rates	0	0	0
Total Direct Operating Costs	**24,496**	**53,417**	**28,921**
Non-Direct Operating Costs			
Operations			
Water Delivery	2,624	5,497	2,873
Asset Delivery	1,171	2,708	1,536
Corporate	9,374	16,973	7,599
Other	799	468	(331)
Sub-total	**13,968**	**25,645**	**11,677**
Non-Infrastructure	1,167	2,632	1,465
Insurance	2,754	2,437	(317)
Working Capital	123	123	0
Total Non-Direct Operating Costs	**18,013**	**30,837**	**12,824**
Total Operating Costs	**42,508**	**84,254**	**41,746**

Source: Seqwater (2012d) and Seqwater (2012am).

Details submitted by Seqwater of the direct and non-direct operating expenditure forecasts for the Central Lockyer Valley and Morton Vale Pipeline by activity are provided in Tables 5.4 and 5.5 respectively, based on the November 2012 NSP.

Table 5.4: Seqwater's Operating Expenditure by Activity – Central Lockyer Valley (Nominal $)

Costs	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Direct					
Operations	243,964	252,163	260,650	269,437	278,535
Repairs and Maintenance	153,280	159,411	165,788	172,419	179,316
Dam Safety	0	0	26,266	0	27,595
Rates	0	0	0	0	0
Non-Direct					
Operations	190,717	195,485	200,372	205,381	210,516
Non-infrastructure	19,572	20,061	20,563	21,077	21,604
Insurance	142,721	146,289	149,946	153,695	157,537
Working Capital	11,617	11,907	12,205	12,510	12,823
Total	**761,871**	**785,316**	**835,790**	**834,520**	**887,926**

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

Table 5.5: Seqwater's Operating Expenditure by Activity – Morton Vale Pipeline (Nominal $)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Direct					
Operations	42,917	44,634	46,419	48,276	50,207
Repairs and Maintenance	10,500	10,920	11,357	11,811	12,284
Dam Safety	0	0	0	0	0
Rates	0	0	0	0	0
Non-Direct					
Operations	25,645	26,286	26,943	27,617	28,307
Non-infrastructure	2,632	2,698	2,765	2,834	2,905
Insurance	2,437	2,498	2,560	2,624	2,690
Working Capital	123	126	129	132	136
Total	**84,254**	**87,162**	**90,174**	**93,295**	**96,529**

Source: Seqwater (2012aj), Seqwater (2012am).

The total operating costs by type are detailed in Table 5.6 for Central Lockyer Valley.

Table 5.6: Seqwater's Operating Costs by Type - Central Lockyer Valley (Nominal $)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Labour	127,838	132,952	138,270	143,800	149,552
Contractors and Materials	12,126	12,611	13,115	13,640	14,186
Electricity	103,000	105,575	108,214	110,920	113,693
Others	1,000	1,025	1,051	1,077	1,104
Planned Repairs and Maintenance	108,829	113,182	117,709	122,418	127,315
Unplanned Repairs and Maintenance	44,451	46,229	48,078	50,001	52,001
Dam Safety	0	0	26,266	0	27,595
Rates	0	0	0	0	0
Non-direct	364,627	373,743	383,086	392,663	402,480
Total	**761,871**	**785,316**	**835,790**	**834,520**	**887,926**

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

Operating costs by type for Morton Vale Pipeline are shown in Table 5.7.

Table 5.7: Seqwater's Operating Costs by Type – Morton Vale Pipeline (Nominal $)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Labour	42,917	44,634	46,419	48,276	50,207
Contractors and Maintenance	0	0	0	0	0
Electricity	0	0	0	0	0
Others	0	0	0	0	0
Planned repairs and maintenance	7,455	7,753	8,063	8,386	8,721
Unplanned repairs and maintenance	3,045	3,167	3,293	3,425	3,562
Dam Safety	0	0	0	0	0
Rates	0	0	0	0	0
Non-direct	30,837	31,608	32,398	33,208	34,038
Total	**84,254**	**87,162**	**90,174**	**93,295**	**96,529**

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

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 needed 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.

Final Report

The Authority received no submissions in regard to forecast operating costs.

6.4 Prudency and Efficiency of Direct Operating Expenditure

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 costs and the method of cost escalation.

Draft Report

For the purposes of the analysis of the prudency of operating costs, the Authority has reviewed Seqwater's November 2012 revised 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's 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 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. In the Central Lockyer Valley WSS, Seqwater has allowed for inspection of Clarendon Dam in 2014-15 and Bill Gunn Dam in 2016-17.

Seqwater's proposed direct operating costs by activity, as submitted in Seqwater's November 2012 NPSs, are provided in Table 5.8.

Table 5.8: Seqwater Direct Operating Expenditure by Activity (Nominal $)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Central Lockyer Valley					
Operations	243,964	252,163	260,650	269,437	278,535
Repairs and Maintenance	153,280	159,411	165,788	172,419	179,316
Dam Safety	0	0	26,266	0	27,595
Rates	0	0	0	0	0
Total	**397,244**	**411,574**	**452,704**	**441,856**	**485,446**
Morton Vale Pipeline					
Operations	42,917	44,634	46,419	48,276	50,207
Repairs and Maintenance	10,500	10,920	11,357	11,811	12,284
Dam Safety	0	0	0	0	0
Rates	0	0	0	0	0
Total	**53,417**	**55,554**	**57,776**	**60,087**	**62,490**

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

Forecast direct operations costs by type are provided in Table 5.9.

Table 5.9: Seqwater Direct Operating Expenditure by Type (Nominal $)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Central Lockyer Valley					
Labour	127,838	132,952	138,270	143,800	149,552
Contractors and Materials	12,126	12,611	13,115	13,640	14,186
Electricity	103,000	105,575	108,214	110,920	113,693
Other	1,000	1,025	1,051	1,077	1,104
Planned Repairs & Maintenance	108,829	113,182	117,709	122,418	127,315
Unplanned Repairs & Maintenance	44,451	46,229	48,078	50,001	52,001
Dam Safety	0	0	26,266	0	27,595
Rates	0	0	0	0	0
Total	**397,244**	**411,574**	**452,704**	**441,856**	**485,446**
Morton Vale Pipeline					
Labour	42,917	44,634	46,419	48,276	50,207
Contractors and Materials	0	0	0	0	0
Electricity	0	0	0	0	0
Other	0	0	0	0	0
Planned Repairs & Maintenance	7,455	7,753	8,063	8,386	8,721
Unplanned Repairs & Maintenance	3,045	3,167	3,293	3,425	3,562
Dam Safety	0	0	0	0	0
Rates	0	0	0	0	0
Total	**53,417**	**55,554**	**57,776**	**60,087**	**62,490**

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

Other Stakeholders

Stakeholders' comments regarding individual direct operating costs are outlined below under specific item reviews.

Authority's Analysis

The Authority engaged SKM to review the prudency and efficiency of Seqwater's proposed direct operating expenditure for this scheme.

SKM reviewed a sample of items, taking account of comments received from stakeholders in regard to specific cost categories for this scheme.

SKM's review of specific cost items for the Central Lockyer Valley WSS and the Authority's conclusions are outlined below in Items 1 and 2. Item 3 relates to direct labour costs in the Morton Vale Pipeline Distribution System.

Although SKM did not specifically review Seqwater's proposed electricity costs for Central Lockyer Valley, the Authority considers these costs require specific consideration[3]. Accordingly, they are included as Item 4.

Item 1: Planned Repairs and Maintenance – Central Lockyer Valley

Stakeholder Submissions

Seqwater

Forecast planned repairs and maintenance costs for 2013-14 were determined by Seqwater by escalating the 2012-13 maintenance budget by a factor of 4%.

In its initial NSP, Seqwater estimated a 2012-13 cost of $309,000, which escalated to 2013-14 was $321,000. Seqwater subsequently identified that the opex budget for Mount Crosby had erroneously been included in the cost breakdown in place of Clarendon Dam opex budget.

Identification of this error resulted in Seqwater revising the opex budget for Central Lockyer Valley repairs and maintenance to $120,700 in 2012-13 and $125,000 in 2013-14. By comparison, actual costs were $98,000 in 2011-12 and $121,000 in 2010-11.

In its November 2012 revised NSP, Seqwater revised the 2012-13 cost estimate further to $108,800. However, SKM's analysis was initially based on the previous forecasts.

Other Stakeholders

During Round 1 consultations in June 2012 (QCA 2012c), irrigators queried why maintenance costs were so high in Central Lockyer Valley, particularly why they are higher than operational costs. Irrigators sought a breakdown of maintenance costs, noting the 'low maintenance' nature of the scheme.

QFF (2012) submitted that Central Lockyer Valley maintenance costs seem high noting that a significant portion of supply is from natural flows with little due to releases from storages.

L. Brimblecombe (2012) also noted that the maintenance costs seemed high at $436,000 (including unplanned maintenance) given that it is a modern facility with no formal delivery system (other than the Morton Vale Pipeline which has separately identified costs).

Consultant's Review

Item Description

Planned maintenance is referred to as scheduled or planned maintenance in Seqwater documentation. Scheduled maintenance refers to periodic maintenance scheduled in advance while planned maintenance is maintenance undertaken to improve the condition of an asset that is operational or work arising from safety audits, environmental; audits or process improvements.

[3] When reviewing proposed operating expenditure of Materials and Other for Central Brisbane River, Lower Lockyer Valley and Warrill Valley WSSs, consideration was also given to Seqwater's proposed electricity costs.

In response to SKM's request for information (RFI015) the following breakdown of costs was provided by Seqwater:

(a) Bill Gunn Dam, R&M Planned - $18,000;

(b) Clarendon Dam, R&M Planned - $11,000;

(c) Clarendon WPS, R&M Planned - $9,000;

(d) Clarendon Weir, R&M Planned - $1,000;

(e) Bill Gunn Dam, R&M Planned - $9,000

(f) Clarendon Dam, R&M Planned - $26,000;

(g) Central Lockyer Valley Irrigation Scheme, R&M Planned - $22,000;

(h) Bill Gunn Dam, R&M Planned - $15,000; and

(i) Clarendon Dam, R&M Planned - $18,000.

Documentation Provided

The documents used for this review were:

(a) Information Request Response, RFI015, Central Lockyer Valley WSS, Repairs & Maintenance – Planned, Seqwater, 14/08/2012;

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

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

(d) MMW Panel User Manual.

Initial information provided by Seqwater outlined the location of planned maintenance, method for budget calculation and workforce.

Additional information requested from Seqwater for this review included:

(a) expenditure for dam maintenance in previous years; and

(b) rates for the old contractor panel and the MMW Panel User Guide.

The requested documents were provided by Seqwater and were taken into account in this assessment.

Prudency

Operating the Central Lockyer Valley WSS, and achieving compliance in practice with legislation (such as dam safety obligations), requires Seqwater to properly repair and maintain the assets that it owns and operates.

The repairs and maintenance required to operate the Central Lockyer Valley WSS or tariff group predominantly relate to ensuring the ongoing operation and reliability of assets such as Bill Gunn and Clarendon Dams (including the catchments and the recreation areas associated

with these dams), the Clarendon Weir and the Clarendon Water Pump Station. As such SKM determined that this expenditure is prudent.

Efficiency

SKM noted that the planned portion of the maintenance budget was calculated through applying a ratio of 71:29 to split maintenance costs between planned and unplanned maintenance.

As demonstrated in Table 5.10 below, forecasting the average historical repairs and maintenance – planned expenditure for the Central Lockyer Valley WSS provides 2012-13 and 2013-14 costs of $113,880 and $118,435 respectively. These values are lower than budget forecasts listed in the revised operating expenditure budget by 6% and 5.5% for 2012-13 and 2013-14 respectively.

Table 5.10: Summary of Repairs and Maintenance – Unplanned Expenditure

Year	*Historical / Forecast*	*Unplanned Maintenance Cost*	*Source*
2010-11[a]	Historical	$120,748	Opex – Irrigation Updated YTD
2011-12[a]	Historical	$98,084	Opex – Irrigation Updated YTD
2012-13[b]	Forecast	$113,880	Opex – Irrigation Updated YTD
2013-14[b]	Forecast	$118,435	Opex – Irrigation Updated YTD
2012-13	Forecast	$120,700	Revised opex budget
2013-14	Forecast	$125,000	Revised opex budget

[a] *Average 2010-11 to 2011-12 historical spend is $109,500*

[b] *Calculated by escalating average historical spend*

Source: SKM (2012).

Seqwater's budget was developed utilising baseline data contained in the Operational Cost Report for 2012-13 that was submitted during the Authority's review of Seqwater's GSCs for 2012-13. The application of a 4% escalation factor to previous budgets was considered by SKM to be potentially on the high side, considering the Reserve Bank of Australia's (RBA) inflation target of 2-3%.

In interviews Seqwater staff stated that planned and reactive budgets are based on historical spends. The supplied information supports this statement, albeit with minor variations as detailed above. As such, SKM concluded that the method of cost calculation utilised by Seqwater in determining the budget for planned maintenance for the Central Lockyer Valley WSS represents the most appropriate method for budget development, as it is based on historical expenditure. Costs were therefore assessed by SKM as being efficient.

Delivery of Service

Planned maintenance is delivered through a panel of providers. Each of Seqwater's operational regions has a panel of four contractors, who have been selected through an expression of interest process for each work classification including electrical, mechanical,

instrumentation, control system pipeline and civil. During interviews Seqwater personnel stated that contractors were appointed in accordance with the State Procurement Policy.

The previous panel agreement ran from 2009 until 2012, while the new panel runs from 2012 for a period of two years, with an option for extending the panel for a further one or two year period. The new panel contains efficiencies over the previous panels including removing the allowance for contractor to charge for travel time and providing short term and long term rates.

Panel rates from the W1 and W2 regions in Central Lockyer Valley were provided by Seqwater to SKM for comparison to market rates (see below).

It must be noted that during the merger of water entities, Seqwater inherited from Brisbane City Council a number of personnel and facilities required to complete maintenance for the Somerset and Wivenhoe dams. These personnel and facilities are utilised in completing maintenance, resulting in an approximately 80% of maintenance being completed in-house, with the remainder 20% being completed by contractors. Currently Seqwater is assessing the efficiency of this method for completion of maintenance.

The results of this assessment would be of interest in future assessments of the efficiency of the method for undertaking maintenance. Conversely, SKM was advised during interviews held with Seqwater staff that in Central Lockyer Valley, 80% of maintenance is contracted out and only 20% is undertaken in house. As such SKM restricted its analysis to the major component of contracted labour as it is unlikely that any inefficiencies in costs for maintenance carried out in house is likely to significantly impact on overall costs.

Notwithstanding the above, the use of panel contractors to complete maintenance, in particular with consideration of the new panel agreement, was considered by SKM to be efficient.

Market Conditions

The expression of interest process used by Seqwater in engaging contractors resulted in 106 expressions of interest across all regions. The number of contractor responses, in addition to the procurement method consistent with the State Procurement Policy has ensured that current market conditions are accurately reflected in contractor rates.

The panel agreements include short term and long term rates. Seqwater personnel stated that the driver behind long term rates was to realise the benefits of offering continual work. SKM considered that the inclusion of long term and short term rates in the panel agreement will result in efficiency gains being realised.

Rawlinsons Australian Construction Handbook 2011 identifies contractor charge out rates for Brisbane including:

(a) electrician: $83 - $88

(b) mechanical services: $75 - $88

(c) instrumentation: $83 - $88

(d) plumber: $77 - $82

While the contractor charge out rates identified in Rawlinsons are not available for all Seqwater categories of contractor, enough information was available to provide a comparison. For long term rates, Seqwater contractor rates are within the rates listed in

Rawlinsons with the exception of W2 instrumentation and W2 pipeline, and a number are lower.

Seqwater's short term rates are generally higher than those listed in Rawlinsons which is not unreasonable given that Rawlinsons' rates are based on a 38 hour working week, and assumes the rate 'assumes a negotiated rate' which 'should not be confused with the usually much higher rate charged for non-contract works'. For the purposes of this exercise, SKM considered that comparison with rates for Brisbane is appropriate given that any location influence on rates as contractors may apply for working in the Lockyer Valley is likely to increase rather than decrease these rates. SKM therefore considered Seqwater's maintenance panel contractor rates efficient.

SKM was not provided with information on the times taken by contractors for individual activities or projects, and therefore is not able to comment on a sample basis of the appropriateness of time taken to complete work. However, SKM reviewed the processes undertaken by Seqwater in engaging and reviewing the activities of contractors, and has also noted the trend in historic costs for contractor activities in planned maintenance. From this, SKM considered the time taken by contractors to be efficient in the main, and was therefore comfortable that the review processes adopted by Seqwater captures and removes unreasonable contractor charges.

SKM's estimators considered the panel rates appropriate when contrasted to SKM's database for such costs. In their assessment, SKM's estimators considered the geographical location of the assets being maintained, the method of procurement, and terms and conditions of the rates, including removal of allowance for contractors to charge travel time.

SKM's estimators additionally considered the utilisation of Brisbane contractor rates as a benchmark for rates of contractors in the Central Lockyer region. It was found that although a minor premium may be expected due to the distance from Brisbane, Central Lockyer Valley rates should be comparable to Brisbane's due to the proximity of major regional centres of Ipswich and Toowoomba, in addition to Brisbane. Further, SKM's estimator identified the competitive tender process in addition to removal of allowance to charge for travel time as being likely to negate any premium otherwise charged by the contractor for the work location.

In the absence of sufficient information to provide this benchmarking, it is necessary to examine unit rates and past expenditure. The unit rates applied to contractors who perform planned maintenance are efficient, as contractors have been selected through a competitive tender process.

Benchmarking forecast budget expenditure against historical expenditure demonstrates that Seqwater's current repairs and maintenance is similar, though slightly higher, than the historical expenditure for Central Lockyer Valley.

Conclusion

SKM concluded that the operating expenditure item is 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.

Authority's Analysis

In response to QFF and other stakeholder comments, the Authority noted that these submissions were made on the basis of erroneous initial estimates made in Seqwater's original NSPs. The revised estimates were in line with stakeholder expectations, that is, were much lower than comparable operations costs in the same scheme.

The Authority noted SKM's conclusions that repairs and maintenance costs be included at $125,000 for 2013-14.

Since SKM's analysis, Seqwater revised the cost forecast for 2012-13 to $108,800. The Authority therefore adopted the revised lower forecast for 2012-13. Escalation is discussed below.

Item 2: Unplanned Repairs and Maintenance – Central Lockyer Valley

Stakeholder Submissions

Seqwater

Forecast unplanned repairs and maintenance costs for 2013-14 were determined by Seqwater by escalating the 2012-13 maintenance budget by a factor of 4%.

In its initial NSP, Seqwater estimated a 2012-13 cost of $126,000, which escalated to 2013-14 was $131,000. Seqwater subsequently identified that the opex budget for Mount Crosby had erroneously been included in the cost breakdown in place of Clarendon Dam opex budget.

Identification of this error resulted in Seqwater revising the opex budget for Central Lockyer Valley WSS repairs and maintenance to $49,300 in 2012-13 and $51,000 in 2013-14. By comparison, the cost was $49,000 in 2011-12 and $40,000 in 2010-11.

In its November revised NSP, Seqwater revised the 2012-13 forecast for unplanned repairs and maintenance to $44,400.

Other Stakeholders

During Round 1 consultations in June 2012 (QCA 2012c), irrigators queried why maintenance costs were so high in Central Lockyer Valley - particularly why they are higher than operational costs. Irrigators sought a breakdown of maintenance costs, noting the 'low maintenance' nature of the scheme.

QFF (2012) submitted that Central Lockyer Valley maintenance costs seem high noting that a significant portion of supply is from natural flows with little due to releases from storages.

L. Brimblecombe (2012) also noted that the maintenance costs seemed high at $436,000 (including planned maintenance) given that it is a modern facility with no formal delivery system (other than Morton Vale Pipeline which has separately identified costs).

Consultant's Review

Item Description

Unplanned maintenance is referred to as reactive maintenance in Seqwater documentation, and refers to maintenance that is undertaken to reinstate the operation or performance of an asset that has ceased to operate or perform as designed.

In response to Information Request RFI016 the below breakdown of costs was provided to SKM:

(a) Bill Gunn Dam, R&M Un-Planned Only: $8,000;

(b) Clarendon Dam, R&M Un-Planned Only: $4,000;

(c) Clarendon WPS, R&M Un-Planned Only: $4,000;

(d) Clarendon Weir, R&M Un-Planned Only: <$1,000;

(e) Bill Gunn Dam, R&M Un-Planned Only: $4,000;

(f) Clarendon Dam, R&M Un-Planned Only: $11,000;

(g) Central Lockyer Valley Irrigation Scheme, R&M Un-Planned Only: $9,000;

(h) Bill Gunn Dam, R&M Un-Planned Only: $5,000; and

(i) Clarendon Dam, R&M Un-Planned Only: $8,000.

Documentation Provided

The documents used for this review were:

(a) Information Request Response, RFI016, Central Lockyer Valley WSS, Repairs & Maintenance – Unplanned, Seqwater, 14/08/2012;

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

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

(d) MMW Panel User Manual.

Initial information provided by Seqwater outlined the location of unplanned maintenance, method for budget calculation and workforce. Additional information requested from Seqwater for this review included:

(a) expenditure for dam maintenance in previous years; and

(b) rates for the old contractor panel and the MMW Panel User Guide.

Prudency

Operating the water supply schemes or tariff group, and achieving compliance in practice with legislation (such as dam safety obligations), requires Seqwater to properly repair and maintain the assets that it owns and operates.

The repairs and maintenance required to operate the Central Lockyer Valley WSS predominantly relate to ensuring the ongoing operation and reliability of assets such as Bill Gunn and Clarendon Dams including the catchments and the recreation areas associated with these dams, the Clarendon Weir and the Clarendon Water Pump Station.

Consequently the operating expenditure item was assessed as prudent.

Efficiency

SKM noted that the planned portion of the maintenance budget was calculated through applying a ratio of 71:29 to split maintenance costs between planned and unplanned maintenance.

In the spreadsheet 'Opex – Irrigation Updated YTD', the total 2012-13 repairs and maintenance budget for Central Lockyer Valley WSS is $153,279, while the actual spend for 2010-11 was $170,068 and for 2011-12 was $138,146. Using Seqwater's allocation of 29% of maintenance as unplanned maintenance, the actual unplanned maintenance spends can be calculated as $49,320 in 2010-11 and $40,063 in 2011-12.

As demonstrated in Table 5.11, forecasting the average historical repairs and maintenance – unplanned expenditure for the Central Lockyer Valley WSS provides 2012-13 and 2013-14 cost of $46,479 and $48,338 respectively. These values are lower than the budget forecasts listed in the revised opex budget by 6% and 5.5 % for 2012-13 and 2013-14 respectively.

Table 5.11: Summary of Unplanned Repairs and Maintenance Costs

Year	*Historical / Forecast*	*Unplanned Maintenance cost*	*Notes*	*Source*
2010-11	Historical	$49,320	Average 2010-11 to 2011-12 historical spend is $44,492	Opex – Irrigation Updated YTD
2011-12	Historical	$40,063		Opex – Irrigation Updated YTD
2012-13	Forecast	$46,479	Calculated by escalating average historical spend	Opex – Irrigation Updated YTD
2013-14	Forecast	$48,338	Calculated by escalating average historical spend	Opex – Irrigation Updated YTD
2012-13	Forecast	$49,300		Revised opex budget
2013-14	Forecast	$51,000		Revised opex budget

Source: SKM (2012).

In determining the 2013-14 budget for planned maintenance, Seqwater applied a 4% escalation to the 2012-13 budget. The budget was developed utilising baseline data contained in the Operational Cost Report for 2012-13 that was submitted during the Authorities review of Seqwater's GSCs for 2012-13. The application of a 4% escalation factor to previous budgets was considered by SKM to be potentially on the high side, considering the RBA's inflation target of 2-3%.

In interviews, Seqwater staff stated that planned and reactive budgets are based on historical expenditure. The supplied information supports this statement, albeit with minor variations as detailed above. As such, SKM concluded that the method of cost calculation utilised by Seqwater in determining the budget for planned maintenance for the Central Lockyer Valley WSS represents the most appropriate method for budget development, as it is based on historical expenditure. Costs were therefore assessed by SKM as being efficient.

Delivery of Service

Unplanned maintenance is delivered through a panel of providers. Each of Seqwater's operational regions has a panel of four contractors, who have been selected through an

expression of interest process for each work classification including electrical, mechanical, instrumentation, control system pipeline and civil. Seqwater personnel stated that contractors were appointed in accordance with the State Procurement Policy. The previous panel agreement ran from 2009 until 2012, whilst the new panel runs from 2012 for a period of two years, with an option for extending the panel for a further one or two year period. The new panel contains efficiencies over the previous panels including removing the allowance for contractor to charge for travel time and providing short term and long term rates.

Specific to Central Lockyer Valley WSS are the W1 and W2 regions, panel rates ($/hr). These rates were provided to SKM for market testing.

It must be noted that during the merger of water entities, Seqwater inherited from Brisbane City Council a number of personnel and facilities required to complete maintenance for the Somerset and Wivenhoe dams. These personnel and facilities are utilised in completing maintenance, resulting in an approximately 80% of maintenance being completed in-house, with the remainder 20% being completed by contractors. Currently Seqwater is assessing the efficiency of this method for completion of maintenance. The results of this assessment would be of interest in future assessments of the efficiency of method of completing maintenance.

Notwithstanding the above, the use of panel contractors to complete maintenance, in particular with consideration of the new panel agreement, was considered by SKM to be efficient.

Market conditions

The expression of interest process used by Seqwater in engaging contractors resulted in 106 expressions of interest across all regions. The number of contractor responses, in addition to the procurement method consistent with the State Procurement Policy has ensured that current market conditions are accurately reflected in contractor rates.

The panel agreements include short term and long term rates. During interviews, Seqwater stated that the driver behind long term rates was to realise the benefits of offering continual work. Panel contractors generally provided both short term and long term rates.

Through the inclusion of long term and short term rates in the panel agreement Seqwater has ensured that efficiencies are available for maintenance by providing continual employment to contractors. However, given the uncertainty associated with unplanned maintenance activities, it was unclear whether these efficiencies are being realised, or able to be realised in unplanned maintenance.

Benchmarking

Rawlinsons Australian Construction Handbook 2011 identifies hourly contractor charge out rates for Brisbane including:

(a) electrician: $83 - $88;

(b) mechanical services: $75 - $88;

(c) instrumentation: $83 - $88; and

(d) plumber: $77 - $82.

While the contractor charge-out rates identified in Rawlinsons are not available for all Seqwater categories of contractor, enough information is available to provide a comparison. For long term rates, Seqwater contractor rates are within the rates listed in Rawlinsons with the exception of W2 instrumentation and W2 pipeline, and a number are lower.

Seqwater's short term rates are generally higher than those listed in Rawlinsons which is not unreasonable given that Rawlinsons' rates are based on a 38 hour working week, and assumes the rate 'assumes a negotiated rate' which 'should not be confused with the usually much higher rate charged for non-contract works'. SKM therefore considered Seqwater's maintenance panel contractor rates efficient.

SKM was not provided with information on the times taken by contractors for individual activities or projects, and therefore is not able to comment on a sample basis of the appropriateness of time taken to complete work. However, SKM reviewed the processes undertake by Seqwater in engaging and reviewing the activities of contractors, and has also noted the trend in historic costs for contractor activities in planned maintenance. From this, SKM considered the time taken by contractors to be efficient in the main, and SKM was assured that the review processes adopted by Seqwater captures and removes unreasonable contractor charges.

SKM's estimators considered the panel rates appropriate when contrasted to SKM's database for such costs. In their assessment, SKM's estimators considered the geographical location of the assets being maintained, the method of procurement, and terms and conditions of the rates, including removal of allowance for contractors to charge travel time.

SKM's estimators additionally considered the utilisation of Brisbane contractor rates as a Benchmark for rates of contractors in the Central Lockyer region. It was found that although a minor premium may be expected due to the distance from Brisbane, Central Lockyer Valley rates should be comparable to Brisbane's due to the proximity of major regional centres of Ipswich and Toowoomba, in addition to Brisbane. Further, SKM's estimator identified the competitive tender process in addition to removal of allowance to charge for travel time as being likely to negate any premium otherwise charged by the contractor for the work location.

Due to the nature of costs associated with unplanned maintenance budgets, in that they are unknown until they occur, it is not possible to benchmark the costs of unplanned maintenance against other unplanned maintenance costs. Additionally, as Seqwater applies the same split between planned and unplanned maintenance costs it is difficult to benchmark between Seqwater assets. In the absence of sufficient information to provide this benchmarking, it is necessary to examine unit rates and past expenditure. The unit rates applied to contractors who perform unplanned maintenance are considered to be efficient, as contractors have been selected through a competitive tender process.

Benchmarking forecast budget expenditure against historical expenditure demonstrates that Seqwater's current unplanned maintenance budget is similar, though slightly higher, than the historical expenditure for the Central Lockyer Valley WSS.

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 was consistent with industry practice and the costs were consistent with prevailing market conditions.

Authority's Analysis

In response to QFF and other stakeholder comments, the Authority noted that these submissions were made on the basis of erroneous initial estimates made in Seqwater's original NSP. The revised estimates were in line with stakeholder expectations, that is, were much lower than comparable operations costs in the same scheme.

The Authority noted that SKM's conclusions that repairs and maintenance costs be included at $51,000 for 2013-14.

However, Seqwater in its November 2012 NSP revised the 2012-13 forecast to $44,400. The Authority therefore adopted the lower forecast.

Item 3: Direct Labour - Morton Vale Pipeline

Stakeholder Submissions

Seqwater

Seqwater submitted that the budgeted direct labour costs of $23,996 for 2012-13 are proposed to be escalated forwards by a factor of 4%, resulting in an estimate of $24,956 in 2013-14.

Seqwater subsequently revised this estimate to $43,000 for 2012-13. Details of the revision which followed queries by SKM are detailed below.

Other Stakeholders

QFF (2012) submitted that Morton Vale Pipeline direct labour costs appear high.

Consultant's Review

The labour resources required to operate the Morton Vale Pipeline distribution system mainly relate to the operation of Morton Vale Water Main (Pipeline) System.

Provided documentation

The documents used for this review are:

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

(b) Seqwater, Central Lockyer Valley Water Supply Scheme, Network Service Plan;

(c) Seqwater, Information Request Response – QCA Irrigation Price Review 2013-17, RFI 021, Morton Vale WSS, Operations – Direct Labour, 14 Aug 2012;

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

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

(f) Seqwater, Opex – Irrigation Salaries Queries.xlsx

Prudency

The Morton Vale Pipeline System is required to meet water ownership and water use legislation and water information reporting requirements. 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. 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 recommends 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 and maintained. Accordingly, additional information relating to actual historical expenditure was sought by SKM.

In response to SKM's request for information, Seqwater provided historical and budgeted costs covering the period between 2008-09 and 2012-13. This is shown in Table 5.12.

Table 5.12: Morton Vale Pipeline Historical Direct Labour Costs

	2008-09 Actual	*2009-10 Actual*	*2010-11 Actual*	*2011-12 Actual*	*2012-13 Budget*
Employee Costs	2,782	1,111	2,167	813	23,996

Source: SKM (2012).

Seqwater indicated to SKM that the budget is set on the basis of the time operators would normally be expected to spend on Morton Vale Pipeline. Whilst the actual expenditure will be different each year, the average over the price path is expected to be consistent. SKM suggested that this will only explain some of the differences seen in Seqwater's 2012-13 budget rather than the almost 30 fold increase between 2011-12 actual expenditure and the 2013-14 budget. SKM noted that over the last three years, the maximum actual expenditure is less than $2,800 (2008-09). Over the last four years, average actual expenditure does not approach anywhere close to the budget for 2012-13.

SKM also sought from Seqwater information regarding the estimated quantity of FTEs assigned to the assets.

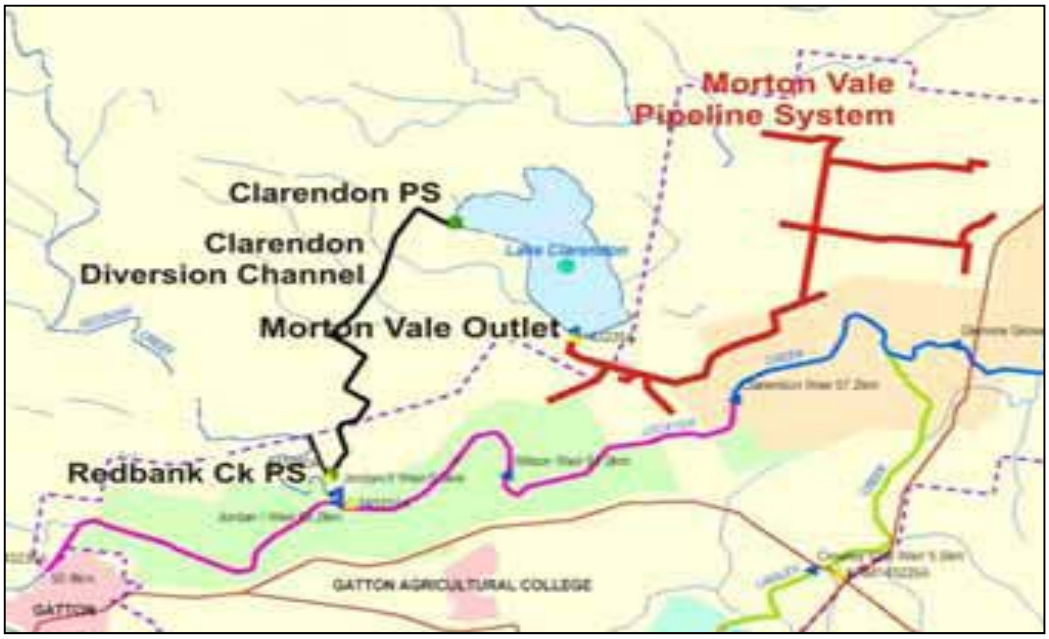
Seqwater provided details of the two staff – a Scheme Supervisor and Operator, and the salary and on-costs allocated to Morton Vale Pipeline to give the total of $23,996. However, there is no information of the time that has been allocated to this pipeline or the rates of the resources allocated.

Seqwater indicated to SKM that the historical expenditure reported for the Morton Vale Pipeline Distribution System is not accurate and does not include much of the actual expenditure incurred on the system. This is because the times spent by Seqwater's staff at this system had been allocated to other areas.

SKM found that while historical costs had been allocated to the Central Lockyer Valley WSS, extracting the Morton Vale Pipeline portion of these costs was not possible as the data did not separately identify Morton Vale Pipeline as the location of any of these costs. SKM then sought to assess the likely work required for the system.

The Morton Vale Pipeline Distribution System consists of 15.5 km of concrete and PVC pipes that diminish in diameter as the distance from the supply source increases. The design of the system aims to provide a minimum residual head at the customer's off-take point of 1m and an equivalent flow rate of 0.75 L/s/ha. Figure 5.1 shows the configuration of the system.

Figure 5.1: Morton Vale Pipeline Distribution System



Source: Seqwater (2012am).

The main activities relating to the Morton Vale Pipeline distribution system require operators to:

(a) manage enquiries from farmers;

(b) monitor the system to ensure that the environment is free from weed and to read the meters;

(c) conduct meter readings every quarter. There are approximately 50 active meters and work activities also includes checking the associated air valves and isolating valves;

(d) undertake surveillance of the pipeline which requires driving the length of the pipeline to monitor flows into the pipeline and leaks in the pipeline. This activity also entails checks on the various valves including -

  (i) 42 air values

  (ii) 13 scour valves; and

  (iii) 14 isolating valve;

(e) inspect air valves for leaks; and

(f) conduct monthly checks on the equipment and generator at the Clarendon Dam outlet. Every quarter, an electrical contractor is also engaged to conduct a safety check.

As part of this re-assessment of costs, Seqwater increased its proposed allocation of labour cost to the Morton Vale Pipeline Distribution System to $43,322 (from $23,996). This is based on an allocation of 0.4FTE to this system.

SKM held a number of discussions with various Seqwater staff in relation to the activities at the Morton Vale Pipeline Distribution System. They established that the monthly activities of pipeline inspection and equipment checks at the Clarendon Dam outlet would require about 1 week of the operator's time. This would include the time required to spray weeds in the vicinity of the pipeline equipment. Occasionally the Scheme Supervisor will also be required in attendance as the work for occupation health and safety reasons would need at least two people to be present (e.g., when a test run on the generator is conducted or when other heavy equipment is tested).

The quarterly exercise of meter reading requires between 2.5 to 3 days including the time required for the submission of data. This may include engagement with farmers and the checking that the meter and associated equipment are in good functioning order.

Based on these discussions, SKM concurred with Seqwater that the time allocated to Morton Vale Pipeline Distribution System is appropriate.

SKM also inquired about the need for overtime at the Morton Vale Pipeline Distribution System. They established that there is little requirement for overtime at this scheme perhaps only 2 to 3 times a year of weekend work if a leak is identified during the week end that requires urgent correction. As a result, SKM considered that the overtime and allowances assigned to the Morton Vale System is over estimated.

Assuming three events requiring overtime occurs at the scheme, SKM estimated that an allocation of approximately $1,500 per year is sufficient. While SKM acknowledged that as the pipeline gets older, such overtime events are likely to increase. For the next two years, SKM did not see this increase occurring to an extent beyond the 3 events allowed for. Accordingly, SKM recommended the revised 2012-13 budget of $36,000 for the Morton Vale Pipeline Distribution System labour cost shown.

Details of the revised forecasts and SKM's estimate are provided below in Table 5.13.

Table 5.13: Seqwater's Revised 2012-13 Labour Cost Budget and SKM's Estimate

Position Description	*Allocation*	*Seqwater's Estimate - Salaries & Wages ($)*	*SKM Estimate – Salaries & Wages ($)*
Scheme Supervisor	10%	10,026	10,026
Operator	30%	24,493	24,493
Overtime and allowances		8,803	1,500
Total (2012-13)		**43,322**	**36,019**

Source: SKM (2012).

To justify this cost forecast, Seqwater will be required to collect and supply sufficient historical information that will provide a level of assurance that the forecasts are reasonable. Seqwater is unable to do this at this stage.

SKM Conclusion

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

SKM estimated a revised 2012-13 forecast of $36,000, which was 17% lower than Seqwater's revised forecast.

Authority's Analysis

The Authority accepted SKM's recommendation in regard to the 2012-13 estimate of $36,000.

Submissions Received from Stakeholders on the Draft Report

Seqwater submitted that SKM overlooked the fact that employee allowances are conditions of employment relating to location and being available for call-out. Allowances are costed to Morton Vale Pipeline in proportion to the employee's time spent there. Seqwater estimated the allowances to be $3,700 and submitted that this amount be added to the Authority's recommended budget of $36,000 – making a total of $39,700.

Authority's Response to Submissions Received on the Draft Report

In the Draft Report, SKM's analysis included provision for overtime to cover 2 to 3 times a year of weekend work, and considered that Seqwater had over-estimated overtime and allowances. Seqwater's position is that the full allowance is required regardless of actual overtime spent.

The Authority remains of the view that only the minimum cost required should be passed through to irrigators. The Authority continues to accept SKM's recommendation and proposes no change. However, SKM indicated that the need for overtime could increase in the future as assets age, and this should be monitored by Seqwater over the regulatory period.

Item 4: Electricity – Central Lockyer Valley

This item was not specifically reviewed by SKM.

Draft Report

Stakeholder Submissions

Seqwater (2012aj) refers to electricity costs in the context of risk – that is, the requirement (as prescribed by the ROP) of Seqwater to pump water into off-stream storages when certain thresholds are met. Seqwater submit that, for example, during recent flooding Seqwater was required to pump water which led to electricity pumping costs as high as $27,000 a month at the Lake Clarendon off stream storage compared to a monthly average cost of approximately $2,000 in the previous two years.

In Central Lockyer Valley WSS, Seqwater forecast pumping costs for Clarendon Dam are based on pumping 50% of the dam's capacity each year. The total electricity cost to completely fill Clarendon Dam was $188,000 across 2010-11 and 2011-12. Allowing for electricity price increases (and assuming only 50% of the dam's volume is pumped) Seqwater forecast electricity costs of $103,000 in 2012-13.

Given the difficulties associated with forecasting electricity costs, Seqwater proposed that electricity costs be escalated by CPI (2.5%) for the regulatory period (from 2013-14) with adjustment required to account for actual costs at the end of the regulatory period. To manage this risk, Seqwater propose to maintain a running balance across the regulatory period and apply revenue neutral 'unders and overs' adjustments for the next regulatory period to account for the difference between forecast and actual costs.

Seqwater (2012g) proposed the following fixed electricity costs:

Table 5.14: Seqwater's Proposed Fixed Electricity Costs - 2012-13

Tariff Group	*April NSP*	*November NSP*
Central Lockyer Valley	$103,000	$103,000
Morton Vale Pipeline	0	0
Total	**$103,000**	**$103,000**

Source: Seqwater (2012d) and Seqwater (2012am).

No other stakeholders have commented on this matter.

Authority's Analysis

As outlined in Volume 1, the Authority noted that electricity is a relatively small cost overall for Seqwater's irrigation activities.

SKM has not directly reviewed electricity costs in the Central Lockyer Valley WSS. However, SKM reviewed electricity costs as part of a review of 'materials and other' operating cost items in Central Brisbane River WSS (Wivenhoe Dam operations) and Lower Lockyer Valley WSS (Atkinson Dam operations).

In these scheme reviews, SKM noted that 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 (SKM 2012).

SKM noted that the electricity prices may be underestimated in the 2013-14 budget, given the approximately 10% increase in energy costs arising from the implementation of the carbon tax. In the Authority's review of GSCs, the amount for the carbon tax was to be included as a cost pass-through or an end-of period adjustment.

Seqwater received advice from the Queensland Government to discontinue all existing state-based carbon reduction schemes to ensure agencies were not subject to overlapping of State and Federal obligations when the carbon tax was introduced on 1 July 2012. Seqwater removed the costs associated with the purchase of green energy from forecast operating expenditure.

Accordingly, the Authority concluded that Seqwater's proposed electricity expenditure to be prudent and efficient and will not apply a reduction to Seqwater's proposed costs. However, the Authority allocated the estimated total electricity cost between fixed and volumetric charges on an appropriate basis (Chapter 6).

In the event that electricity costs vary from those forecast, the Authority recommended that any material variations to forecasts will only be considered as part of an end-of-period adjustment.

Submissions Received from Stakeholders on the Draft Report

At the Authority's request, Seqwater (2013f) provided further details on how the electricity costs were determined.

Central Lockyer Valley WSS electricity budget for 2012-13 was calculated on the assumption that a total of 50% of its volume would be pumped. Although recent wet conditions means actual electricity costs were well below budget, the 50% assumption was still considered to be a reasonable average over the 4 years of the price path.

Due to the extended dry period in the years leading up to Clarendon Dam filling in 2010, there is no previous history of electricity usage upon which to base the budget assumptions. Consequently, the assumptions made by Seqwater's experienced operators and managers were considered to be the best guide available to estimate electricity use.

Seqwater advised that the electricity cost at Lake Clarendon is budgeted at $4.16/ML based on 41% peak (at $0.3329/kWh) and 59% off-peak use (initially submitted as $0.0072/kWh) [which seemed incorrect to the Authority]. This reflected costs incurred to pump water in 2010-11 which showed that 30kWh is required per ML. Electricity costs were based on a non-regulated retail tariff under contract.

Authority's Response to Submissions Received on the Draft Report

The Authority queried Seqwater's submission in regard to off-peak rates and confirmed that the Lake Clarendon Dam off-peak rate was in fact $0.1172/kWh in 2012-13.

When this adjustment is made, and after indexing to 2013-14, the Authority arrived at an average cost of $6.25/ML. However, this amount should not be applied to total water use in the scheme, as a portion of water is delivered from Bill Gunn Dam, which has no variable electricity pumping costs. Only Lake Clarendon Dam has variable electricity pumping costs.

To make an adjustment for this fact, and to ensure that irrigators did not pay too high a volumetric charge, the Authority assumed an apportionment of electricity costs based on the WSS''s major total commandable storages. That is, Lake Clarendon makes up 79% of capacity and Bill Gunn Dam comprises 21% of total commandable storage capacity.

As a result, the Authority estimated that the variable electricity cost of $6.25/ML should be reduced by 21%, (for Bill Gunn Dame), which resulted in reduced average variable electricity cost for the bulk tariff group of $4.95/ML of water use (excluding Morton Vale Pipeline, which is gravity fed, and does not benefit from the variable electricity pumping cost of extracting water from Lake Clarendon Dam).

Applying the $4.95/ML to the Authority's assumed typical water use volume of 10,251ML gives a total of $51,118 in variable costs for 2013-14. Fixed costs are $59,225, resulting in total electricity costs for the WSS of $110,343 in 2013-14.

The Authority has adopted the above revised estimates of electricity cost for the purposes of determining total costs in this final report. Refer Chapter 6: Total Costs and Final Prices.

Conclusion

Draft Report

Sampled Operating Cost Items

For sampled items, the Authority has adopted:

(a) a revised planned repairs and maintenance budget for Central Lockyer Valley WSS for 2012-13 of $108,800, as submitted by Seqwater in its revised November 2012 NSP. This estimate is lower than the efficient cost recommended by SKM of $121,000;

(b) a revised unplanned repairs and maintenance budget for Central Lockyer Valley WSS for 2012-13 of $44,400 as submitted by Seqwater in its revised November 2012 NSP. This estimate is lower than the efficient cost recommended by SKM of $49,000; and

(c) a revised direct labour budget for Morton Vale Pipeline of $36,000 for 2012-13 (representing a 17% reduction compared to Seqwater's subsequent November proposal).

The Authority also accepts Seqwater's proposed electricity costs of $103,000 for 2012-13.

Unsampled Operating Cost Items

For unsampled items, as outlined in Volume 1, the Authority reviewed in detail approximately 55% of proposed direct operating expenditure for prudency and efficiency. An issue is how to address scheme specific direct operating expenditure 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%[4].

Final Report

Based on this methodology, the Authority's recommended direct operating expenditure is outlined below in Table 5.15.

Since the Draft Report, total electricity costs for 2012-13 have increased from $103,000 to $107,652 (or $110,343 in 2013-14) – reflecting the revised information from Seqwater and the Authority's subsequent adjustments to variable electricity costs.

[4] Although the average saving indentified from sampled items was 15.53%, the Authority chose not to include a large reduction in Repairs & Maintenance costs in the Central Lockyer Valley WSS that were included in the original sample in error.

Table 5.15: Review of Budgeted 2012-13 Direct Operating Expenditure (Nominal $'000)

	Seqwater (April 2012 NSP)	*Seqwater (November 2012 NSP)*	*Authority's Recommended (Draft)*	*Authority's Recommended Final*
Sampled Item				
Item 1: Planned Repairs & Maintenance - Central Lockyer Valley	309	109	109	109
Item 2: Unplanned Repairs & Maintenance – Central Lockyer Valley	126	44	44	44
Item 3: Direct Labour – Morton Vale Pipeline	24	43	36	36
Item 4: Electricity	0	103	103	108
Unsampled Items				
Other Direct Operating Costs – Central Lockyer Valley	-	-	5% saving to apply	5% saving to apply
Other Direct Operating Costs – Morton Vale Pipeline	-	-	5% saving to apply	5% saving to apply

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

In addition to the efficiency adjustments for the 2012-13 year, the Authority also considered it appropriate to reduce 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 4 years of the regulatory period (2013-14 to 2016-17). Details are provided in Volume 1.

Cost Information Issues

Seqwater (2012aj) submitted that the April NSP did not properly allocate direct operating costs between related tariff groups due to overlaps in certain operational areas. That is, Central Lockyer Valley WSS is linked to the Morton Vale Pipeline tariff group.

Seqwater did not initially accurately allocate costs to each tariff group. Seqwater budgets, in the absence of economic regulation and therefore the apparent need to allocate costs carefully for irrigation pricing purposes, had previously been developed more generally for an operational area.

The Authority's irrigation review has caused Seqwater to substantially revise its forecast operating costs in these tariff groups.

Seqwater's revised direct labour costs are presented in Table 5.16.

Table 5.16: Direct Labour Costs – Central Lockyer Valley Operational Area (2012-13$)

Tariff Group	*April Seqwater Forecast*	*Revised Seqwater Forecast*	*Change in Seqwater Forecast*	*SKM Final Estimate*	*QCA Recommendation*	*QCA Variation to April*
Central Lockyer Valley (Unsampled)	166,000	128,000	(38,000)	n.a.	121,600	(5%)
Morton Vale Pipeline (Sampled)	24,000	43,000	19,000	36,000	36,000	50%
Total	**190,000**	**171,000**	**(19,000)**	**n.a.**	**157,600**	**(17%)**

Source: QCA (2012).

Table 5.16 shows that Seqwater reduced the overall costs in the Central Lockyer Valley WSS operational area by $19,000. Of these, the Authority reduced the Central Lockyer Valley tariff group's 2012-13 revised labour cost forecast of $128,000 by 5% as it is unsampled. (The Authority has adopted SKM's final estimate for Morton Vale Pipeline.)

Seqwater (2012aj) submitted that similar cost allocation issues had arisen for repairs and maintenance costs submitted in April in for the Central Lockyer Valley WSS operational area. Table 5.17 refers.

Table 5.17: Repairs and Maintenance Costs – Central Lockyer Valley Operational Area (2012-13$)

Tariff Group	*April Seqwater Forecast*	*Revised Seqwater Forecast*	*Change in Seqwater Forecast*	*SKM Final Estimate*	*QCA Recommendation*	*QCA Variation to April*
Central Lockyer Valley (Sampled)	435,000	153,000	282,000	170,000	153,000	(65%)
Morton Vale Pipeline (Unsampled)	500	10,500	10,000	n.a.	9,975	1895%
Total	**435,500**	**163,500**	**272,000**	**n.a.**	**162,975**	**(63%)**

Source: QCA (2012).

Table 5.17 also shows that Seqwater's revisions (after April) reduced the overall costs in the Central Lockyer Valley WSS operational area by $272,000. Of these, the Authority adopted a forecast cost of $153,000 for the Central Lockyer Valley bulk tariff group on the basis that this is Seqwater's revised estimate. This departs from SKM's final estimate of $170,000 but accords with Seqwater's most recent submission.

Seqwater (2012aj) submitted that the forecast repairs and maintenance budget for Morton Vale Pipeline had been inadvertently included in the related Central Lockyer Valley tariff group forecast (rather than specifically attributed to the Morton Vale Pipeline tariff group).

The Authority considered that it is reasonable for Seqwater to reallocate $10,000 of repairs and maintenance costs from the Central Lockyer Valley bulk tariff group to the Morton Vale Pipeline tariff group as submitted by Seqwater. As this item was not reviewed by SKM (due

to its relative immateriality), the Authority reduced the $10,500 now allocated to the Morton Vale Pipeline by the 5% generic cost reduction applied to unsampled operating costs.

Submissions Received from Stakeholders on the Draft Report

Seqwater (2013a) submitted that the 5% reduction for unsampled labour in the Central Lockyer Valley WSS was untenable and Seqwater does not have the capacity to find these savings. Seqwater's arguments were that:

(a) labour costs are set under the EBA which is legally enforceable and are not discretionary;

(b) Seqwater is required by the dam safety regulator to undertake dam safety surveillance which includes weekends. Seqwater must pay the employee entitlements arising from this work;

(c) labour costs associated with planned maintenance are not discretionary; and

(d) reactive or unplanned maintenance is required to meet emerging incidents and maintain service delivery – these costs are not discretionary.

Seqwater also noted that SKM's review of direct labour costs in the Lower Lockyer Valley WSS resulted in savings of 1% relating to overtime. Seqwater considered the process used for Central Lockyer Valley WSS was identical and requested the 5% reduction be removed.

Authority's Response to Submissions Received on the Draft Report

For the Draft Report, SKM reviewed direct labour costs in Lower Lockyer (3% saving), Cedar Pocket Dam (23% saving, revised to 0% for the Final Report), Central Brisbane River WSS (4% saving), Morton Vale Pipeline (16% saving), Logan River (4% saving) and Mary Valley (0% saving).

SKM concluded that while care must be taken, the findings may be applicable to other schemes as the issues are likely to be similar. Because of the variation in the level of savings recommended by SKM in the various schemes, the Authority found it difficult to extrapolate the findings from other schemes to Central Lockyer Valley WSS. For this reason, the Authority adopted the average savings applied across all unsampled costs of 5%.

The Authority accepts that many of the sampled direct labour costs include contractors' costs to varying degrees. However, the Authority maintains that a 5% reduction is reasonable given the reductions applied in other schemes.

Summary of Direct Operating Costs

A comparison of Seqwater's and the Authority's Draft Report direct operating costs for the Central Lockyer Valley and Morton Vale Pipeline are set out in Table 5.18 and Table 5.19.

The Authority's estimates of planned and unplanned repairs and maintenance costs were adjusted to conform with Seqwater's proposed 71:29 ratio between planned and unplanned components. Total costs were consistent with the efficient level of costs identified above.

In Table 5.18, electricity costs are incorporated into the operations category.

The Authority's proposed costs include all specific adjustments and the Authority's proposed cost escalations as noted above.

The final estimated direct operating costs for Central Lockyer Valley WSS are higher due to the inclusion of consultation costs and higher electricity costs.

Direct operating costs for Morton Vale Pipeline remain unchanged.

Table 5.18: Direct Operating Costs – Central Lockyer Valley WSS (Nominal $)

Costs	*Seqwater*				*Authority*			
	2013-14	*2014-15*	*2015-16*	*2016-17*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Central Lockyer Valley					**Draft Report**			
Operations	252,163	260,650	269,437	278,535	242,948	248,414	253,970	259,616
Repairs and Maintenance Planned	113,182	117,709	122,418	127,315	124,046	127,043	130,082	133,160
Repairs and Maintenance Unplanned	46,229	48,078	50,001	52,001	32,974	33,771	34,579	35,397
Dam Safety	0	26,266	0	27,595	0	24,204	0	24,643
Rates	0	0	0	0	0	0	0	0
Total	**411,574**	**452,704**	**441,856**	**485,446**	**399,968**	**433,432**	**418,630**	**452,816**
					Final Report			
Operations					247,044	252,613	258,275	264,030
Repairs and Maintenance Planned					124,046	127,043	130,082	133,160
Repairs and Maintenance Unplanned					32,974	33,771	34,579	35,397
Dam Safety					0	24,204	0	24,643
Rates					0	0	0	0
Consultation					7,175	7,354	7,538	7,727
Total					**411,239**	**444,984**	**430,473**	**464,956**

Source: Seqwater (2012am) and QCA (2012) and (2013). Note: Totals vary from NSP due to exclusion of revenue offset (which is dealt within the following chapter), and rounding.

Table 5.19: Direct Operating Costs – Morton Vale Pipeline (Nominal $)

Costs	*Seqwater*				*Authority*			
	2013-14	*2014-15*	*2015-16*	*2016-17*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Morton Vale Pipeline					**Draft Report**			
Operations	44,634	46,419	48,276	50,207	36,756	37,499	38,248	39,003
Repairs and Maintenance Planned	7,753	8,063	8,386	8,721	8,073	8,268	8,465	8,666
Repairs and Maintenance Unplanned	3,167	3,293	3,425	3,562	2,146	2,198	2,250	2,304
Dam Safety	0	0	0	0	0	0	0	0
Rates	0	0	0	0	0	0	0	0
Total	**55,554**	**57,776**	**60,087**	**62,490**	**46,974**	**47,964**	**48,964**	**49,972**
					Final Report			
Operations					36,756	37,499	38,248	39,003
Repairs and Maintenance Planned					8,073	8,268	8,465	8,666
Repairs and Maintenance Unplanned					2,146	2,198	2,250	2,304
Dam Safety					0	0	0	0
Rates					0	0	0	0
Consultation					0	0	0	0
Total					**46,974**	**47,964**	**48,964**	**49,972**

Source: Seqwater (2012am) and QCA (2012) and (2013). Note: Totals vary from NSP due to exclusion of revenue offset (which is dealt within the following chapter), and rounding.

6.5 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 previously as part of the 2012-13 GSC review.

For this investigation, Seqwater made adjustments to the aggregate non-direct cost estimates submitted to the Authority's GSC investigation to exclude costs not relevant to 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 (Volume 1).

Previous Review

As noted above, in the previous review, Indec reviewed SunWater's non-direct costs for 2006-11. Non-direct costs were allocated to schemes on the basis of total direct costs.

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.

In brief, Seqwater forecast non-direct costs by deriving the costs for a representative base year (2012-13) and escalating forward over each year of the regulatory period by the CPI, estimated to be 2.5% per annum.

Seqwater proposed that the TDCs of each scheme be used to allocate non-direct costs, except for insurance premium costs which are allocated on the basis of asset replacement values.

Total non-direct costs and those allocated to Central Lockyer Valley and Morton Vale Pipeline are outlined below in Table 5.20**.**

Table 5.20: Seqwater's Budgeted and Forecast Total Non-Direct Costs (Nominal $)

	2012-13	***2013-14***	***2014-15***	***2015-16***	***2016-17***
Seqwater	9,523,510	9,761,598	10,005,638	10,255.779	10,512,173
Central Lockyer Valley	364,627	373,743	383.086	392,663	402.480
Morton Vale Pipeline	30,837	31,608	32,398	33,208	34,038

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

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, the Minister's subsequent decision regarding this review and further analysis by Seqwater.

A comparison of the alternative estimates for the Central Lockyer Valley WSS is provided below for non-direct operations costs (Table 5.21 and Table 5.22 refer).

Table 5.21: Non-Direct Operations Costs – Central Lockyer Valley, 2012-13 Forecasts (Nominal $)

Costs	*April NSP*	*November NSP*	*Variance ($)*	*Variance (%)*
Water Delivery	79,977	40,878	(39,100)	(49%)
Asset Delivery	35,706	20,136	(15,570)	(44%)
Business Services	197,388	81,702	(115,686)	(59%)
Organisational Development	80,436	38,465	(41,971)	(52%)
Executive	7,920	6,059	(1,861)	(24%)
Other	24,356	3,478	(20,877)	(86%)
Total Non-Direct Operations	**425,782**	**190,717**	**(235,065)**	**(55%)**

Source: Seqwater (2012d) and Seqwater (20-12am).

Table 5.22: Non-Direct Operations Costs – Morton Vale Pipeline, 2012-13 Forecasts (Nominal $)

Costs	*April NSP*	*November NSP*	*Variance ($)*	*Variance (%)*
Water Delivery	2,624	5,497	2,873	109
Asset Delivery	1,171	2,708	1,536	131
Business Services	6,476	10,986	4,511	70
Organisational Development	2,639	5,172	2,533	96
Executive	260	815	555	214
Other	799	468	(331)	(41)
Total Non-Direct Operations	**13,968**	**25,645**	**11,677**	**84**

Source: Seqwater (2012d) and Seqwater (2012am).

Corporate functions have been defined as comprising the Office of the CEO and the Organisational Development and Business Services group. Corporate costs represent almost half the non-direct operating costs allocated to irrigation schemes in 2012-13.

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, monitoring and maintenance of various servers and network infrastructure, demand management, application management, strategy maintenance and development, business analysis and subject matter expert advice.

Seqwater's submitted non-direct operating costs for the Central Lockyer Valley WSS are detailed in Tables 5.23 and 5.24 below (November 2012 NSP Seqwater 2012am).

Table 5.23: Seqwater's Budgeted and Forecast Total Non-Direct Costs - Central Lockyer Valley (Nominal $)

Costs	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations					
Water Delivery	40,878	41,900	42,947	44,021	45,121
Asset Delivery	20,136	20,639	21,155	21,684	22,226
Business Services	81,702	83,744	85,838	87,984	90,184
Organisational Development	38,465	39,426	40,412	41,422	42,458
CEO	6,059	6,210	6,366	6,525	6,688
Other	3,478	3,565	3,654	3,746	3,839
Sub - Total Operations	**190,717**	**195,485**	**200,372**	**205,381**	**210,516**
Non-Infrastructure Assets	**19,572**	**20,061**	**20,563**	**21,077**	**21,604**
Insurance	**142,721**	**146,289**	**149,946**	**153,695**	**157,537**
Working Capital	**11,617**	**11,907**	**12,205**	**12,510**	**12,823**
Total	**364,627**	**373,743**	**383,086**	**392,663**	**402,480**

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

Table 5.24: Seqwater's Forecast Total Non-Direct Costs Morton Vale Pipeline (Nominal $)

Costs	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations					
Water Delivery	5,497	5,634	5,775	5,919	6,067
Asset Delivery	2,708	2,775	2,845	2,916	2,989
Business Services	10,986	11,261	11,543	11,831	12,127
Organisational Development	5,172	5,302	5,434	5,570	5,709
CEO	815	835	856	877	899
Other	468	479	491	504	516
Sub - Total Operations	**25,645**	**26,287**	**26,944**	**27,617**	**28,308**
Non-Infrastructure Assets	**2,632**	**2,698**	**2,765**	**2,834**	**2,905**
Insurance	**2,437**	**2,498**	**2,560**	**2,624**	**2,690**
Working Capital	**123**	**126**	**129**	**132**	**136**
Total	**30,837**	**31,608**	**32,399**	**33,209**	**34,039**

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

In addition to operations related non-direct costs, Seqwater identified costs associated with the use of non-infrastructure assets, insurance and working capital.

Central Lockyer Valley and Morton Vale Pipeline utilise a range of non-infrastructure assets (buildings and plant and equipment). Although these assets are not included in the renewals expenditure forecasts, it is necessary for costs associated with the use of these assets to be attributed to the WSS. Seqwater used depreciation costs as a proxy for the cost associated with use of these assets. However, these depreciation costs are not captured for the WSS. Accordingly, aggregate non-infrastructure depreciation for 2012-13 was 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 allocated its 2012-13 premium to Central Lockyer Valley and Morton Vale Pipeline using the replacement value of scheme assets. These values were escalated by CPI to determine a premium for each year of the forecast period.

For working capital, Seqwater indicated that the Authority has already adopted a methodology for calculating Seqwater's working capital in GSCs. Seqwater calculated the working capital allowance using this methodology and the values submitted to the Authority for 2012-13, at $5.538 million.

Seqwater allocated a portion of this working capital allowance to Central Lockyer Valley and Morton Vale Pipeline on the basis of revenue attributable to the WSS. 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 RBA's target range for consumer price inflation at the time of its submission, being 2.5% per annum.

Other Stakeholders

During Round 1 consultations in June 2012 (QCA 2012c), irrigators commented that non-direct costs appear high. QFF (2012) and Brimblecombe (2012) queried why non-direct costs were so high particularly as they exceed non-direct operations costs.

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 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 approved by Government, the Authority did not propose a further reduction for 2012-13.

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.

In addition to the above adjustments for the 2012-13 year, the Authority also considered it appropriate to apply 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 four years of the regulatory period (2013-14 to 2016-17).

Forworking capital, the largest portion of irrigators' payments to Seqwater arises from fixed Part A and C 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 the stakeholder comment that non-direct costs appeared excessive, particularly as they appeared to exceed direct costs, the Authority noted that non-direct costs were lower than direct costs. Further, the Authority proposed to apply efficiency gains over the four-year regulatory period.

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.

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 2011 Floods Commission of 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 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.

The Authority's recommended level of non-direct costs to be recovered from the Central Lockyer Valley and Morton Vale Pipeline tariff groups (from all customers) is set out in Table 5.25. The allocation of these costs between HP and MP customers is discussed below.

Compared to the Draft Report, insurance costs are slightly higher. However, this is more than offset by lower non-direct operations costs due to these costs being allocated on the basis of total direct costs excluding electricity.

Table 5.25: Non-Direct Operating Costs (Nominal $)

	Seqwater				*Authority*			
	2013-14	***2014-15***	***2015-16***	***2016-17***	***2013-14***	***2014-15***	***2015-16***	***2016-17***
Central Lockyer Valley					**Draft Report**			
Non-Direct Operations	195,485	200,372	205,381	210,516	191,607	194,444	197,276	200,100
Non-Infrastructure	20,061	20,563	21,077	21,604	19,528	19,711	19,891	20,068
Insurance	146,289	149,946	153,695	157,537	144,095	145,448	146,779	148,085
Working Capital	11,907	12,205	12,510	12,823	0	0	0	0
Total	**373,743**	**383,086**	**392,663**	**402,480**	**355,229**	**359,603**	**363,946**	**368,253**
					Final Report			
Non-Direct Operations					169,791	172,306	174,815	177,317
Non-Infrastructure					17,295	17,458	17,617	17,774
Insurance					146,289	149,946	153,695	157,537
Working Capital					0	0	0	0
Total					**333,376**	**339,709**	**346,127**	**352,629**
Morton Vale Pipeline					**Draft Report**			
Non-Direct Operations	26,286	26,943	27,617	28,307	22,547	22,881	23,215	23,547
Non-Infrastructure	2,698	2,765	2,834	2,905	2,298	2,320	2,341	2,362
Insurance	2,498	2,560	2,624	2,690	2,461	2,484	2,507	2,529
Working Capital	126	129	132	136	0	0	0	0
Total	**31,608**	**32,398**	**33,208**	**34,038**	**27,306**	**27,685**	**28,062**	**28,437**
					Final Report			
Non-Direct Operations					22,590	22,925	23,259	23,592
Non-Infrastructure					2,301	2,323	2,344	2,365
Insurance					2,498	2,561	2,625	2,690
Working Capital					0	0	0	0
Total					**27,390**	**27,808**	**28,227**	**28,647**

Source: Seqwater (2012am) and QCA (2012) and (2013)

6.6 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 direct 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 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 proposed 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 (2012am) submitted that in the Central Lockyer Valley, there are HP and MP entitlement types. Seqwater holds 184ML of HP, while irrigators hold the vast majority of the remaining IWA and WAE. The 2006 pricing review also treated all irrigation WAE types the same for pricing purposes – for example, the irrigation customer WAE totalled 16,372ML in the Tier 1 report for Central Lockyer Valley and Morton Vale Pipeline tariff groups. This is comparable to the 16,315ML set out above.

Also, the 2006 review assigned 99.8% of costs to the irrigation sector. Seqwater proposed not to move from this pre-existing arrangement, particularly given the underlying resource management arrangements are yet to be set by DNRM and codified in a final ROP. For example, water sharing rules are yet to be determined for the majority of WAE in the scheme, making any assessment of relative difference problematic.

Secondly, Seqwater's 184ML of High Priority WAE is immaterial (1.1%) of the total WAE in the scheme, and Seqwater did not believe a HUF for the scheme is justified nor would add to the accuracy of the pricing outcomes. Instead, Seqwater proposed that nominal WAE % are applied in this scheme until such time as WAE are formalised, which means that non-HP WAE account for 98.9% of lower bound costs.

Authority's Analysis

The Authority accepted Seqwater's proposed approach of allocating costs on the basis of nominal WAE given the low materiality of HP allocations (1.1%) and WAE have not yet been formalised for the scheme.

The effect for the Central Lockyer Valley WSS is detailed in the following section (as it takes into account other factors relevant to establishing total costs).

Submissions Received from Stakeholders on the Draft Report

DNRM (2013a) submitted that there are no High A and High B water entitlements in the scheme, as noted in the Authority's Draft Report.

Authority's Response to Submissions Received on the Draft Report

Although these details were sourced from Seqwater's November 2012 NSP, the Authority has adjusted the Draft Report text above to reflect these corrections.

6.7 Cost Escalation

Draft Report

Stakeholder Submissions

Seqwater proposed that where its costs rise in line with inflation, it has adopted the mid-point of the 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 5 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 proposed that electricity costs associated with the assumed pumping in the 2012-13 budget be escalated by inflation (2.5%) for the regulatory period (from 2013-14) with a proposed end-of-period adjustment to reflect any material actual electricity costs incurred.

Seqwater proposed that other direct operating cost categories (that is, other than direct labour and contractors and materials) and all non-direct costs, be escalated at CPI.

Authority's Analysis

The Authority's analysis of cost escalation is detailed in Volume 1.

The Authority recommends 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 the proposed 4% by Seqwater);

(b) the costs of direct materials should be escalated by 4% per annum;

(c) the costs 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.

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 confirmed its intention to submit 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. In Central Lockyer Valley WSS, the Authority applied contract tariff rates as defined above for 2013-14.

Beyond 2013-14, and consistent with the Draft Report, the Authority recommends escalation of all electricity costs by 2.5% each subsequent year of the regulatory period. The Authority also endorses Seqwater's view that material variations could be addressed via application for an end-of-period adjustment to future prices.

6.8 Summary of Operating Costs

Seqwater's proposed operating costs by activity and type for the Central Lockyer Valley WSS are set out in Table 5.26.

Table 5.26: Seqwater's Proposed Operating Costs – Central Lockyer Valley WSS (Nominal $)

	2013-14	*2014-15*	*2015-16*	*2016-17*
Direct Operations				
Labour	132,952	138,270	143,800	149,552
Contractors and Materials	12,611	13,115	13,640	14,186
Electricity	105,575	108,214	110,920	113,693
Other	1,025	1,051	1,077	1,104
Repairs and Maintenance				
Planned	113,182	117,709	122,418	127,315
Unplanned	46,229	48,078	50,001	52,001
Dam Safety	0	26,266	0	27,595
Rates	0	0	0	0
Non-Direct Costs				
Non-Direct Operations	195,485	200,372	205,381	210,516
Non-Infrastructure	20,061	20,563	21,077	21,604
Insurance	146,289	149,946	153,695	157,537
Working Capital	11,907	12,205	12,510	12,823
Total	**785,316**	**835,790**	**834,520**	**887,926**

Source: Seqwater (2012am).

The Authority's recommended operating costs are set out in Table 5.27 (Draft Report) and Table 5.28 (Final Report).

Table 5.27: Authority's Draft Operating Costs – Central Lockyer Valley WSS (Nominal $)

	2013-14	*2014-15*	*2015-16*	*2016-17*
Direct Operations				
Labour	123,931	126,438	128,964	131,508
Contractors and Materials	13,136	13,453	13,775	14,101
Electricity	105,575	108,214	110,920	113,693
Other	306	309	312	315
Repairs and Maintenance				
Planned	124,046	127,043	130,082	133,160
Unplanned	32,974	33,771	34,579	35,397
Dam Safety	0	24,204	0	24,643
Rates	0	0	0	0
Non-Direct Costs				
Non-Direct Operations	191,607	194,444	197,276	200,100
Non-Infrastructure	19,528	19,711	19,891	20,068
Insurance	144,095	145,448	146,779	148,085
Working Capital	0	0	0	0
Total	**755,197**	**793,035**	**782,576**	**821,069**

Source: QCA (2012).

The Authority's Draft Report recommended operating costs for 2013-14 for Central Lockyer Valley WSS were 4% lower than Seqwater's proposed amount, as defined in its November NSP.

Table 5.28: Authority's Final Operating Costs – Central Lockyer Valley WSS (Nominal $)

	2013-14	*2014-15*	*2015-16*	*2016-17*
Direct Operations				
Labour	123,931	126,438	128,964	131,508
Contractors and Materials	12,479	12,780	13,086	13,396
Electricity	110,343	113,101	115,929	118,827
Other	291	294	296	299
Repairs and Maintenance				
Planned	124,046	127,043	130,082	133,160
Unplanned	32,974	33,771	34,579	35,397
Dam Safety	0	24,204	0	24,643
Rates	0	0	0	0
Consultation	7,175	7,354	7,538	7,727
Non-Direct Costs				
Non-Direct Operations	169,791	172,306	174,815	177,317
Non-Infrastructure	17,295	17,458	17,617	17,774
Insurance	146,289	149,946	153,695	157,537
Working Capital	0	0	0	0
Total	**744,615**	**784,694**	**776,600**	**817,585**

Source: QCA (2013).

Compared to the Draft Report, total operating costs in the Central Lockyer Valley WSS are lower.

Seqwater's proposed operating costs by activity and type for the Morton Vale Pipeline are set out in Table 5.29.

Table 5.29: Seqwater's Operating Costs – Morton Vale Pipeline (Nominal $)

	2013-14	*2014-15*	*2015-16*	*2016-17*
Direct Operations				
Labour	44,634	46,419	48,276	50,207
Contractors and Materials	0	0	0	0
Electricity	0	0	0	0
Other	0	0	0	0
Repairs and Maintenance				
Planned	7,753	8,063	8,386	8,721
Unplanned	3,167	3,293	3,425	3,562
Dam Safety	0	0	0	0
Rates	0	0	0	0
Non-Direct Costs				
Non-Direct Operations	26,286	26,943	27,617	28,307
Non-Infrastructure	2,698	2,765	2,834	2,905
Insurance	2,498	2,560	2,624	2,690
Working Capital	126	129	132	136
Total	**87,162**	**90,174**	**93,295**	**96,529**

Source: Seqwater (2012am).

The Authority's recommended operating costs are set out in Table 5.30 (Draft Report) and Table 5.31 (Final Report).

Table 5.30: Authority's Draft Operating Costs – Morton Vale Pipeline (Nominal $)

	2013-14	*2014-15*	*2015-16*	*2016-17*
Direct Operations				
Labour	36,756	37,499	38,248	39,003
Contractors and Materials	0	0	0	0
Electricity	0	0	0	0
Other	0	0	0	0
Repairs and Maintenance				
Planned	8,073	8,268	8,465	8,666
Unplanned	2,146	2,198	2,250	2,304
Dam Safety	0	0	0	0
Rates	0	0	0	0
Non-Direct Costs				
Non-Direct Operations	22,547	22,881	23,215	23,547
Non-Infrastructure	2,298	2,320	2,341	2,362
Insurance	2,461	2,484	2,507	2,529
Working Capital	0	0	0	0
Total	**74,280**	**75,649**	**77,026**	**78,409**

Source: QCA (2012).

The Authority's draft recommended operating costs for 2013-14 for Morton Vale Pipeline are 16% lower than Seqwater's proposed amount, as defined in its November 2012 NSP.

Table 5.31: Authority's Final Operating Costs – Morton Vale Pipeline (Nominal $)

	2013-14	*2014-15*	*2015-16*	*2016-17*
Direct Operations				
Labour	36,756	37,499	38,248	39,003
Contractors and Materials	0	0	0	0
Electricity	0	0	0	0
Other	0	0	0	0
Repairs and Maintenance				
Planned	8,073	8,268	8,465	8,666
Unplanned	2,146	2,198	2,250	2,304
Dam Safety	0	0	0	0
Rates	0	0	0	0
Consultation	0	0	0	0
Non-Direct Costs				
Non-Direct Operations	22,590	22,925	23,259	23,592
Non-Infrastructure	2,301	2,323	2,344	2,365
Insurance	2,498	2,561	2,625	2,690
Working Capital	0	0	0	0
Total	**74,364**	**75,773**	**77,191**	**78,619**

Source: QCA (2013).

7. TOTAL COSTS AND FINAL PRICES

7.1 Background

Ministerial Direction

The Ministerial Direction requires the Authority to recommend irrigation prices to apply to Seqwater WSSs. Prices are to apply for the four-year regulatory period 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 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

In the 2006-11 price paths, real price increases over the five years were capped at $10/ML for relevant schemes. This real price increase applied to both tariff groups of the Central Lockyer Valley WSS – that is, the Central Lockyer tariff group and the Morton Vale Pipeline tariff group. 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.

For both the Central Lockyer Valley and the Morton Vale Pipeline tariff groups, prices over 2006-11 increased by an average of $2/ML per annum in real terms (plus CPI)[5]. Despite these increases both tariff groups did not reach lower bound costs by the conclusion of the 2006-11 price path.

[5] The average annual increase of $2/ML in real terms was comprised of a $0.25 increase in the first year, a $2.50 increase in each of the next three years, and a $2.25 increase in the last year.

7.2 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 associated with each tariff group;

(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.

7.3 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 costs.

Revenue Offsets

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.

Draft Report

Stakeholder Submissions

In the Central Lockyer Valley WSS, Seqwater included a revenue offset of $700, which relates to leasing of land. Seqwater's estimate was based on the historical average. This estimate was provided in the November 2012 NSP – the initial submission made no provision for revenue offsets in the Central Lockyer Valley WSS.

Authority's Analysis

As Seqwater's revised revenue offsets are consistent with the historical averages (in real terms), the Authority accepted the amount of $700 as a revenue offset for Central Lockyer Valley WSS.

Final Report

The Authority proposes no changes to revenue offsets for the Final Report.

Summary of Total Costs

The Authority's estimate of prudent and efficient total costs for the Central Lockyer Valley and Morton Vale tariff groups for the 2013-17 regulatory period are outlined in Tables 6.1 and 6.2. Total costs for 2012-13 are also provided including a renewals annuity deflated from 2013-14 (not actual). Total costs reflect the costs for the specific tariff group (all sectors) and do not include any adjustments for Queensland Government's pricing policies.

Table 6.1: Comparison of Total Costs Central Lockyer Valley (Nominal $)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Seqwater (April NSP)					
Renewals Annuity	133,291	136,623	142,813	146,639	149,847
Direct Operating	746,672	774,979	830,645	834,915	894,227
Non-Direct Operating	622,623	638,189	654,144	670,497	687,260
Less Revenue Offsets	0	0	0	0	0
Return on Working Capital	11,617	11,907	12,205	12,510	12,823
Total	**1,514,203**	**1,561,698**	**1,639,807**	**1,664,562**	**1,744,156**
Seqwater (November NSP)					
Renewals Annuity	293,153	300,481	304,505	306,616	308,303
Direct Operating	397,244	411,574	452,704	441,856	485,446
Non-Direct Operating	353,010	361,835	370,881	380,153	389,657
Less Revenue Offsets	(700)	(718)	(735)	(754)	(773)
Return on Working Capital	11,617	11,907	12,205	12,510	12,823
Total	**1,054,324**	**1,085,080**	**1,139,559**	**1,140,382**	**1,195,456**
Authority (Draft)					
Renewals Annuity	-	210,327	213,059	213,312	213,007
Direct Operating	-	399,968	433,432	418,630	452,816
Non-Direct Operating	-	355,229	359,603	363,946	368,253
Less Revenue Offsets	-	(718)	(735)	(754)	(773)
Return on Working Capital	-	0	0	0	0
Total	**-**	**964,806**	**1,005,358**	**995,135**	**1,033,303**
Authority (Final)					
Renewals Annuity		211,440	214,498	214,905	214,772
Direct Operating		411,239	444,984	430,473	464,956
Non-Direct Operating		333,376	339,709	346,127	352,629
Less Revenue Offsets		(718)	(735)	(754)	(773)
Return on Working Capital		0	0	0	0
Total		**955,337**	**998,456**	**990,751**	**1,031,585**

Source: Seqwater (2012d), Seqwater (2012am) QCA (2012) and QCA (2013).

Table 6.2: Comparison of Total Costs - Morton Vale Pipeline (Nominal $)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Seqwater (April NSP)					
Renewals Annuity	(26,559)	(27,223)	(26,764)	(26,286)	(25,788)
Direct Operating	24,496	25,476	26,495	27,554	28,657
Non-Direct Operating	17,890	18,337	18,795	19,265	19,747
Less Revenue Offsets	0	0	0	0	0
Return on Working Capital	123	126	129	132	136
Total	**15,949**	**16,716**	**18,655**	**20,666**	**22,751**
Seqwater (November NSP)					
Renewals Annuity	(82,494)	(84,557)	(84,528)	(84,497)	(84,464)
Direct Operating	53,417	55,554	57,776	60,087	62,490
Non-Direct Operating	30,714	31,482	32,269	33,076	33,903
Less Revenue Offsets	0	0	0	0	0
Return on Working Capital	123	126	129	132	136
Total	**1,760**	**2,605**	**5,646**	**8,798**	**12,065**
Authority (Draft)					
Renewals Annuity	-	(20,085)	(19,714)	(19,344)	(18,975)
Direct Operating	-	46,974	47,964	48,964	49,972
Non-Direct Operating	-	27,306	27,685	28,062	28,437
Less Revenue Offsets	-	0	0	0	0
Return on Working Capital	-	0	0	0	0
Total	**-**	**54,195**	**55,935**	**57,682**	**59,435**
Authority (Final)					
Renewals Annuity		(21,011)	(20,659)	(20,307)	(19,956)
Direct Operating		46,974	47,964	48,964	49,972
Non-Direct Operating		27,390	27,808	28,227	28,647
Less Revenue Offsets		0	0	0	0
Return on Working Capital		0	0	0	0
Total		**53,353**	**55,114**	**56,884**	**58,663**

Source: Seqwater (2012d), Seqwater (2012am), QCA (2012) and QCA (2013).

7.4 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 WSS.

Previous Review 2006-11

As outlined in Chapter 3, the tariff structure that applied during the 2006-11 price paths for the Central Lockyer Valley tariff group differed from the tariff structures generally adopted in other SunWater/Seqwater WSSs (Table 6.3 refers).

Table 6.3: Seqwater's Central Lockyer Valley Tariff Group Tariff Structures 2006-11

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*
Part A - Fixed	0	14%	23%	31%	37%
Part B - Variable	100%	86%	77%	69%	63%

Source: SunWater (2006a).

For the Morton Vale Pipeline tariff group:

(a) a 70% fixed (Part A) and 30% variable (Part B) tariff structure was considered appropriate as it reflected the existing (past) tariff structures[6]; and

(b) consistent with the provisions of the Morton Vale Pipeline Contract, in addition to the Part A/Part B tariff structure, an additional capital access charge was also applied.

Draft Report

Stakeholder Submissions

Seqwater

Seqwater (2012s) submitted that all operations (including electricity), maintenance and renewal costs for both the Central Lockyer Valley and Morton Vale Pipeline tariff groups do not vary with water use (that is, they are 100% fixed costs).

Seqwater subsequently submitted that Morton Vale Pipeline is gravity fed and, therefore, no variable electricity costs are incurred. However, in the event that the Authority were to consider applying the average SunWater distribution system finding for variable costs of 33%, then Seqwater considered it more appropriate that the Authority recommend the average finding for distribution systems without electricity. In this instance, the average SunWater distribution system finding for variable costs is 11.6%.

Seqwater (2012am) also submitted that, as no WAE has as yet been issued by DNRM to individual irrigators of the Central Lockyer Valley tariff group, it is impractical to levy a fixed Part A charge. Seqwater consider this arrangement is unsustainable as it has led Seqwater to historically under-recovering costs. Accordingly, given this institutional uncertainty (that is, in the absence of the issuing of WAE for the foreseeable future),

[6] Under these arrangements, the volumetric Part B tariff was not directly linked to variable costs as it reflected variable costs *plus* the balance of fixed costs not recovered by the fixed Part A tariff.

Seqwater have proposed the introduction of an interim volumetric charge which would be set to recover both fixed and variable costs.

Other Stakeholders

QFF (2012) and stakeholders during Round 1 consultations in June 2012 (QCA 2012c) suggested there are pumping costs associated with the off-stream storages and that these are likely to be considered a variable cost.

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 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 specific average findings determined for the SunWater Review to Seqwater schemes (Table 6.4 refers).

Table 6.4: Variable Costs

Activity	*Variable in Bulk*	*Variable in Distribution System (Unbundled)**
Labour	20%	25%
Contractors	20%	25%
Repairs and Maintenance	20%	25%
Materials and Other	20%	25%
Dam Safety	0%	n.a.
Rates	0%	n.a.
Electricity (pumping)	46%	n.a.
Non-Directs	0%	0%
Renewal Annuity	0%	0%

Source: Indec (2011). Note: For labour, contractors, repairs and maintenance and materials and other distribution costs, the Authority has adopted 25% variable based on Indec's findings for SunWater which ranged from 24-28%.

In the Central Lockyer Valley WSS, the Authority considered that some electricity pumping costs are fixed (relating to a ROP requirement to fill Lake Clarendon Dam) and some are variable (relating to water deliveries to meet bulk customer demand). The Authority estimated that about 46% of electricity costs are variable (see Chapter 5 for details).

The Authority accepted that Morton Vale Pipeline is gravity fed and therefore incurs no direct electricity costs in delivery of water. However, Morton Vale Pipeline customers should share in the cost of electricity incurred from time to time in pumping to Lake

Clarendon. A share of the cost is effectively passed through the bulk water charge in the Part A bundled tariff to Morton Vale Pipeline customers. There is no specific additional electricity component in the unbundled Morton Vale Pipeline charge.

Compared to Seqwater's proposed 11.6% variable costs for Morton Vale Pipeline, the Authority's approach resulted in variable costs comprising about 22% of total costs on an unbundled basis.

As noted in Chapter 2, for Central Lockyer Valley tariff group there are no customer WAE and, as a consequence, a fixed charge cannot apply. The Authority recommended:

(a) that a fixed charge be calculated on the basis of the number of ML allocated to the scheme. This would represent the charge per ML that would apply only in the event tradable water allocations (which the Authority recommend be put in place by 30 June 2015) were put in place; and

(b) in the absence of WAE being allocated to individual irrigators, Seqwater would forego this revenue until tradable WAE are put in place.

The Authority considered this arrangement will provide certainty to irrigators and an incentive for institutional deficiencies to be addressed.

7.5 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 usage of water.

In earlier chapters, the Authority has identified its preferred approach to allocating costs between priority groups. This approach is summarised in Table 6.5.

Table 6.5: Fixed Cost Allocation Between High and Medium Priority WAE

Cost Component	*Fixed Cost Allocation Methodology*	
	Bulk WSSs	*Distribution Systems*
Renewals Annuity	HUF	WAE
Repairs and Maintenance	HUF	WAE
Other Operating Costs	50% by HUF and 50% by WAE	WAE

Source: QCA (2012). Note: Where the HUF does not apply the Authority has developed an alternative approach. Refer Vol 1 - Chapter 5: Renewals Annuity. 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 as shown in Table 6.6.

Final Report

The draft and final fixed revenue requirements are in Table 6.6.

Table 6.6: Allocation of Fixed Revenue Requirement Between High and Medium Priority WAE (2013-14 Nominal $'000)

Tariff Group	*HP Fixed Revenue Requirement*	*MP Fixed Revenue Requirement*	*HP Irrigation Share of Fixed Revenue Requirement*	*MP Irrigation Share of Fixed Revenue Requirement*
Draft Report				
Central Lockyer Valley	9	845	9	841
Morton Vale Pipeline	0	42	0	42
Total	**9**	**886**	**9**	**883**
Final Report				
Central Lockyer Valley	6	840	3	837
Morton Vale Pipeline	0	42	0	42
Total	**6**	**882**	**3**	**879**

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

7.6 Volumetric Charges

Draft Report

On the basis of its analysis of the share of total costs, the Authority estimated total variable costs for each tariff group. To convert this estimate of total variable costs to a volumetric tariff required the Authority to consider how such costs vary with each ML of usage.

The Authority noted that Seqwater's forecast total costs were developed using a zero-based budgeting approach that assumed a typical year but also assumed that all costs (except some electricity) were fixed.

Moreover, the usage in the Central Lockyer Valley and Morton Vale Pipeline tariff groups is highly variable between each year with no discernible year to year consistency (other than when there is no supply in which case variable costs and volumetric charges would be zero). It is more variable than for SunWater where the Authority adopted the highest five of the eight years of usage as a basis for establishing the per ML volumetric charge. A simple ten-year average would also be misleading given the large number of recent low use years due to drought and floods.

As the notion of typical costs relates to management practices which seek to ensure services are made available when required, the Authority has adopted a water use estimate based on the average of those years that exceed the ten year average for each tariff group. A longer term estimate (say the past 15 years) would fail to recognise structural changes occurring in water use, while a shorter period (say the most recent five years) would reflect the most recent years of flood and drought.

Final Report

In many Seqwater WSSs, the Authority found that its estimate of typical water use in the Draft Report has been potentially underestimated as the data set included a series of drought years followed by floods which have resulted in abnormally low water use.

In the Draft Report, the all sectors water use estimates of 6,272ML in Central Lockyer Valley and 489ML in Morton Vale Pipeline were derived by taking the 10-year average, then selecting the average of use years that exceeded this average.

The average was limited to 10 years due to concerns about the impacts of long-term structural adjustment on water usage, particularly in regard to the dairy industry in other schemes. However, the Authority considered that, based on observations of the dairy industry, structural adjustment has occurred since 1999-00 and the Draft Report 10-year average approach has not avoided the impact of ongoing structural adjustment. The impacts of drought on water use assumptions are also considered to be more important.

The Authority therefore considered a 15-year data set to remove the effect of drought and excessively wet conditions on typical water use. By taking the 15-year average, and the average of years that exceeded this amount, the estimate of typical water use was increased to 10,251ML in Central Lockyer Valley and 1,453ML in Morton Vale Pipeline.

Table 6.7 shows draft and final total variable costs (all sectors), the typical all sectors' average water use and the resulting volumetric charge for the Central Lockyer Valley WSS.

Table 6.7: 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)*
Draft Report			
Central Lockyer Valley	112	6,272	18.48
Morton Vale Pipeline	12	489	24.84
Final Report			
Central Lockyer Valley	110	11,857	9.89
Morton Vale Pipeline	12	1,453	8.17

Source: QCA (2012) and QCA (2013). Note: The volumetric charge is derived by taking the NPV of total variable costs divided by the estimate of typical 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).

7.7 Cost Reflective Fixed and Volumetric Tariffs

Draft Report

The Authority derived cost-reflective fixed and volumetric tariffs for each tariff group 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.

Submissions Received from Stakeholders on the Draft Report

QFF (2013b) and Central Lockyer Valley WSS representatives (2013) submitted cost-reflective tariffs could not be implemented without significant restructuring in both tariff groups.

Morton Vale Pipeline

Seqwater (2013a) submitted that although the IROL identifies 3,507ML to be provided to entitlement holders associated with the Morton Vale Pipeline, Seqwater only have an obligation to provide 3,470ML[7].

QFF (2013b and 2013c) and Central Lockyer Valley WSS representatives (2013) advised that the Morton Vale Pipeline had an original capacity of 5,051ML. Central Lockyer Valley WSS Representatives (2013) provided documentation from 1995 indicating that prior to construction, amounts were allocated to irrigators totalling 5,051ML of WAE.

In 1997-98, the then Department of Natural Resources (DNR) recognised there was a problem with the release rules for Lake Clarendon for the Morton Vale Pipeline. Morton Vale Pipeline customers were presented with options to either reduce total WAE by 1,150ML or reduce entitlements on farms to 4ML/ha of land considered suitable for irrigation. DNR subsequently clawed back the allocations at time of commissioning.

The 2000 IROL further reduced the total WAE in the scheme to 3,507ML.

Central Lockyer Valley WSS Representatives (2013) submitted that the reduced customer base should not bear total renewals and operating costs of the scheme. Cost allocation (renewals and operating expenditure) should be based on the higher nominal volume associated with the original capacity of the pipeline – not that proposed by Seqwater.

DNRM (2013d) submitted (in response to the Authority's information request) that:

(a) Morton Vale Pipeline was commissioned in 1997;

(b) the pipeline was intended to provide an agreed capacity of 4,997ML and that it is reasonable to consider that the pipeline was built to provide approximately 5,000ML of capacity;

(c) since being commissioned, some allocations have been relinquished (either partly of in full) in response to irrigators not being able to justify the expense of their allocation; and

(d) Seqwater is currently authorised to deliver up to 3,507ML to irrigators (as outlined in the IROL).

Authority's Response to Submissions Received on the Draft Report

Current prices for both tariff groups are lower than cost reflective levels and, consequently, price paths are required to move them to a position of cost reflectivity.

[7] Seqwater has submitted that the 37ML difference is explained by:
- 30 ML of Morton Vale Pipeline WAE having been surrendered; and
- 7 ML being an inconsistency between Seqwater's understanding of WAE and DNRM's records.

The Authority's approach prioritises recovery of variable costs, with the revenue shortfall applied to the fixed charge (noting that the bulk fixed charge is not to apply until customer WAE are issued by 30 June 2016). This means that as the price path progresses, the tariff structure will see increasing revenue collected from the fixed charge while the variable charge remains at the same level in real terms.

The issue of restructuring in the scheme is recognised as a concern, but is beyond the scope of this review and the Ministerial Direction. The Authority notes that while cost-reflective charges are higher than current levels, the price path provides four years of certainty for irrigators. Also the recommendation that DNRM finalise WAE in the Central Lockyer Valley tariff group would provide further certainty to irrigators.

Morton Vale Pipeline WAE

The appropriate nominal WAE volume is required to determine cost reflective tariffs.

The Authority reviewed the history of nominal WAE allocated to Morton Vale Pipeline on the basis of available information. The key milestones are shown in Table 6.8 (below).

Prior to construction, the pipeline was originally intended to supply 5,051ML of nominal allocation (Central Lockyer Valley WSS Representatives, 2013). This was revealed in a plan developed in 1993 by the then Department of Primary Industries which also indicated volumes for individual irrigators.

An amendment in January 1995 confirmed the total of 5,051ML. According to a letter from the Minister in September 1998, this amount was maintained for an initial period of two years pending the outcome of additional hydrological studies (Central Lockyer Valley WSS Representatives 2013).

According to DNR Water Statistics 1997-98, the volume had been reduced to 4,377ML. This was also the volume used in the 1998-99 review of water by the Water Reform Unit for State Water Projects (later SunWater).

In November 2000 the IROL published a total of 3,507ML of MP IWA.

Table 6.8: Nominal Allocations - Morton Vale Pipeline

Year	*Milestone*	*Nominal Allocation (ML)*
January 1995	Prior to construction	5,051
1998-99	1999-00 Price Review	4,377
November 2000	IROL	3,507
2005-06	2005-06 Price Review	3,590
2012-13	Current WAE	3,470

Source: The State of Queensland (DNR Water Statistics) 1998, 1999 and 2001, Seqwater (2012)

In the 2005-06 pricing review, the pipeline volume used for cost allocation purposes was 3,590ML compared to the current 3,470ML proposed by Seqwater. According to DNRM (2013d), termination fees were not paid on the difference in volumes between the original 5,051ML and the current 3,470ML.

On this basis, the Authority proposes that the cost allocation for Morton Vale Pipeline fixed (Part C) charges should be based on the original documented 5,051ML volume. This is to recognise that current irrigators should not pay for the fixed costs of the scheme that could be attributed to the surrendered WAE given termination fees were not paid.

The Authority also notes that on-farm investment in pumping and reticulation equipment was likely to have been based on the original volume of 5,051ML.

It is noted that the bulk charge (Part A) takes into account a volume of 3,470ML, not 5,051ML. This recognises that in the bulk context, the reduction in total volume in the Central Lockyer Valley WSS enhances the supply reliability for all bulk water users, including Morton Vale Pipeline users.

Conclusion

Table 6.9 presents current tariffs, Seqwater's (April and November 2012) proposed tariffs and the Authority's cost reflective tariffs. The table provides separate cost reflective tariffs for the bulk charge to Morton Vale Pipeline customers.

Table 6.9: Cost-Reflective Tariffs by Tariff Group (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 Lockyer Valley					
Fixed (Part A) Bulk	12.37	96.15	66.53	51.71	53.14
Volumetric (Part B) Bulk	32.91	0	0	18.48	9.89
Fixed (Part A) (Morton Vale Pipeline)	n.a	96.15	66.53	51.71	46.24
Volumetric Part B (Morton Vale Pipeline)	n.a	0	0	9.35	4.94
Morton Vale Pipeline (Unbundled)					
Fixed (Part C)	9.61	10.51	5.45	14.85	9.54
Volumetric (Part D)	4.77	0	0	24.84	8.17
Morton Vale Pipeline (Bundled)					
Fixed (Part A + C)	21.98	106.66	71.98	66.57	55.78
Volumetric (Part B + D)	37.68	0	0	34.19	13.10

Source: Seqwater (2012aj), Seqwater (2012d), Seqwater (2012am), QCA (2012) and QCA (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.

7.8 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, (such as in the Central Lockyer Valley WSS), 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.

Revenue Target

The Authority estimated a current revenue level in each scheme to be used as a benchmark for establishing revenue targets over the 2013-17 period. Current revenue was calculated as:

$$(current\ fixed\ charges \times WAE) + (current\ variable\ charges \times average\ water\ use\ over\ the\ 2006-12\ period)$$

Table 6.10 below compares the current revenue with the revenue that would be required to achieve efficient cost recovery in each tariff group.

Table 6.10: 2013-14 Irrigation Revenues (Nominal $'000)

Tariff Group	*Current Revenue*	*Revenue Based on QCA Cost Reflective Prices*	*Revenue Difference*	*Current Cost Recovery %*
Draft Report				
Central Lockyer Valley	249.9	709.3	459.3	35%
Morton Vale Pipeline	91.3	242.6	151.3	38%
Final Report				
Central Lockyer Valley	309.9	894.2	584.2	35%
Morton Vale Pipeline	91.3	198.0	106.7	46%

Source: QCA (2012) and QCA (2013).

Table 6.11 summarises the total current revenue maintenance target consistent with the Government's requirements - that is, it includes provision for an initial $2/ML increase in fixed charges for 2013-14. 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.

For Central Lockyer Valley WSS tariff group, current revenues are 35% of final cost-reflective revenues, and for Morton Vale Pipeline tariff group, 46% of revenues.

Table 6.11: Revenue Maintenance Target (2013-14 Nominal $'000)

Tariff Group	*Revenue Maintenance Target*	*Fixed Revenue*	*Variable Revenue*
Draft Report			
Central Lockyer Valley	282.4	211.4	71.1
Morton Vale Pipeline	98.3	90.5	7.8
Final Report			
Central Lockyer Valley	275.8	236.9	38.9
Morton Vale Pipeline	98.3	95.3	3.0

Source: QCA (2012) and QCA (2013). Note: The revenue maintenance target includes an increase in the fixed charge of $2/ML for 2013-14.

Irrigation Water Prices

Draft Report

Given current revenues for both Central Lockyer Valley and Morton Vale Pipeline were below the assessed level of the cost-reflective revenue requirement, the Authority was required to recommend a price path for the four-year regulatory period.

The Authority proposed a price path set at an average pace similar to that applied over 2006-11 - that is an average of $2/ML per year. This level of increase was previously considered as being reasonable.

The $2/ML increase was applied to the fixed charges (Part A). The Authority escalated all such charges at CPI (2.5% per annum from July 2013) in accordance with past practice.

However, the Authority did not recommend price paths beyond 2013-17 as this is beyond the scope of the Ministerial Direction.

On the basis of the previously described analysis and principles, and the Authority's interpretation that Ministerial Direction required the Authority to at least maintain real (2006-11) revenues, the Authority's recommended draft prices were outlined in Table 6.12.

Table 6.12: Past and Draft Water Prices 2006-17 (Nominal $/ML)

Tariff Group	*Past Prices*							*Draft Recommended Prices*			
	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Central Lockyer Valley											
Fixed (Part A)*	0.0	2.92	5.84	8.87	11.79	12.21	12.37	0.0	0.0	17.87	20.47
Volumetric (Part B)	27.36	28.16	29.51	30.44	31.35	32.48	32.91	18.48	18.94	19.42	19.90
Central Lockyer Valley (Morton Vale Pipeline bulk charges)											
Fixed (Part A)								13.01	15.39	17.87	20.47
Volumetric (Part B)								9.35	9.59	9.83	10.07
Morton Vale Pipeline (Unbundled)											
Fixed (Part C)								13.06	13.38	13.72	14.06
Volumetric (Part D)								24.84	25.46	26.10	26.75
Morton Vale Pipeline (Bundled)											
Fixed (Part A + C)	14.60	15.96	17.76	19.38	20.94	21.69	21.98	26.07	28.77	31.59	34.53
Volumetric (Part B + D)	24.99	27.39	30.47	33.23	35.90	37.19	37.68	34.19	35.05	35.93	36.82

*Source: Seqwater (2012) and QCA (2012). * Note the Part A charges do not apply from 2006-07 to 2014-15 as individual irrigator nominal WAE has not been issued.*

Submissions Received from Stakeholders on the Draft Report

During consultations (January 2013), irrigators generally supported the Authority's recommended prices for Central Lockyer Valley WSS. However, irrigators questioned why the Part A charge was increasing by $2/ML per year while the Part B charge is barely increasing.

Authority's Response to Submissions Received on the Draft Report

The Authority's pricing framework results in the volumetric charge being fully cost-reflective from the outset. That is, the volumetric charges recoup the assessed variable costs in each tariff group. Increases in charges are however required to move the fixed charge closer to cost reflective levels – hence real increases are only applied to fixed charges.

The Authority's final recommended price paths for Central Lockyer Valley and Morton Vale Pipeline during 2013-17 are shown in Table 6.13. The Central Lockyer Valley WSS and Morton Vale Pipeline tariff groups do not reach their respective cost-reflective revenue requirements during 2013-17.

In the Central Lockyer Valley WSS, cost reflective volumetric charges are lower when compared to 2012-13. To maintain revenues, the balance not recouped by volumetric

charges is recovered by fixed charges which are higher when they are reintroduced in 2016-17. In Morton Vale Pipeline, the volumetric charge is lower and the fixed charge higher when compared to 2012-13. As current revenues are below cost-reflective revenues, the Authority recommends price paths 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.

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 6.13: Past and Final Water Prices 2006-17 (Nominal $/ML)

Tariff Group	*Past Prices*							*Final Recommended Prices*			
	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Central Lockyer Valley											
Fixed (Part A)*	0.0	2.92	5.84	8.87	11.79	12.21	12.37	0.00	0.00	0.00	26.43
Volumetric (Part B)	27.36	28.16	29.51	30.44	31.35	32.48	32.91	9.89	10.13	10.39	10.65
Central Lockyer Valley (Morton Vale Pipeline bulk charges)											
Fixed (Part A)								18.55	21.06	23.69	26.43
Volumetric (Part B)								4.94	5.06	5.19	5.32
Morton Vale Pipeline (Unbundled)											
Fixed (Part C)								8.91	9.14	9.36	9.60
Volumetric (Part D)								8.17	8.37	8.58	8.79
Morton Vale Pipeline (Bundled)											
Fixed (Part A + C)	14.60	15.96	17.76	19.38	20.94	21.69	21.98	27.46	30.20	33.05	36.03
Volumetric (Part B + D)	24.99	27.39	30.47	33.23	35.90	37.19	37.68	13.10	13.43	13.77	14.11

*Source: Seqwater (2012) and QCA (2013). * Note the Part A charges do not apply from 2006-07 to 2014-15 as individual irrigator nominal WAE has not been issued.*

Termination Fees

Draft Report

As noted in Chapter 4: Pricing Framework, termination fees should reflect the relevant fixed (distribution system) costs. During 2006-11 and the 2011-13 interim period, a specified contractual termination fee applied in the Morton Vale Pipeline.

The Authority acknowledged that current contractual arrangements continue to have effect, but presented the outcome of the Authority's method to establish an indicative termination

fee. The Authority's approach was recommended should current contractual arrangements be renegotiated.

The Authority's recommended termination fees for 2013-17 were based on the cost-reflective (Part C) fixed tariff and not the recommended fixed tariff.

Final Report

As outlined previously, Seqwater advised that if Government approves the Authority's recommended approach to termination fees for Morton Vale Pipeline, this would provide a basis to renegotiate the Morton Vale Pipeline Contract in consultation with customers.

In addition, the Authority proposes that the cost allocation for Morton Vale Pipeline Part C fixed charges (and, therefore, the basis for determining the termination fee) should reflect the original documented 5,051ML volume rather than 3470ML. This revised Final Report approach reduces the termination fee from that outlined in the Draft Report.

The draft and final termination fees for 2013-17 are shown in Table 6.14.

Termination fees 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 SunWater and was approved by Government.

Volume 1 (Chapter 4: Price Framework) notes, however, that lower termination fees can be levied at Seqwater's discretion on the proviso that remaining customers do not pay the future costs of that forgone revenue (resulting from an exit).

Table 6.14: Termination Fees for Morton Vale Pipeline (Nominal $/ML)

Tariff Group	*Termination Fee*			
	2013-14	**2014-15**	**2015-16**	**2016-17**
Morton Vale Pipeline - Draft	163.35	167.42	171.71	176.00
Morton Vale Pipeline - Final	104.94	107.58	110.33	113.08

Source: QCA (2012) and (2013)

7.9 Impact of Recommended Prices

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 usage and nominal WAE (see Volume 1).

Draft Report

Stakeholder Submissions

During consultations in June 2012 (QCA 2012c), stakeholders:

(a) indicated that a 100% Part B water use charge in the order of $300/ML was too high. [Seqwater's April 2012 submission proposed a volumetric charge of $304/ML, revised to $210/ML in the November 2012 NSP]. However, one irrigator indicated that for some irrigators with "commercial" operations $200/ML may not be too high

if there was no Part A (fixed) charge and only if the water was 100% reliable, high priority and delivered under pressure at the farm gate; and

(b) expressed concern that some farmers may not be able to afford the lower bound charges submitted by Seqwater, particularly those growing relatively low value crops. This is particularly the case given current other pressures such as rising farm costs and increasing competitive pressures.

QFF (2012) asserts that although Seqwater has waived the capital charge to date, the Authority should examine the capacity of irrigators to pay for the capital charge, and Part A, B, C and D tariffs, should Seqwater enforce its contractual rights to do so.

Authority's Analysis

In response to stakeholders' concerns regarding the impact of recommended prices, the Authority noted that the Ministerial Direction requires prices to increase in real terms at a pace consistent with 2006-11 prices until such time as the Central Lockyer Valley WSS reaches efficient costs.

Seqwater proposed a bundled price of $71.98/ML for Morton Vale Pipeline tariff group in 2013-14. The Authority's bundled fixed charge is $26.07/ML and the volumetric charge is $34.19/ML, a total of $60.26 for a delivered ML of water.

As outlined above, Seqwater's November NSP proposed an interim volumetric charge of $210.50 to apply to the Central Lockyer Valley tariff group in 2013-14. Given that the Authority recommended that this interim charge not apply and that a fixed charge only apply when WAE are issued to individual irrigators, the Authority's recommended approach represented a reduction on Seqwater's proposed 2013-14 charges.

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 was considered to apply to the Seqwater irrigation review.

Submissions Received from Stakeholders on the Draft Report

I. Lyne (2013) submitted that with a proposed increase of 16% per year, the price will have doubled over a six-year period without any guarantee of water being in the facility.

QFF (2013b) and Central Lockyer Valley WSS representatives (2013) submitted that the impact of high fixed charges on farming enterprise viability in both tariff groups is of concern, particularly the impact of fixed tariffs on those with smaller allocations who tend to have modest use.

QFF (2013b) and Central Lockyer Valley WSS representatives (2013) submitted that the Authority's recommendation that fixed tariffs for the Central Lockyer Valley tariff group not be introduced for two [revised to three] years is welcomed [but only once individual customer WAE have been issued by DNRM].

Authority's Response to Submissions Received on the Draft Report

The Authority acknowledges that the $2/ML increase in fixed charges per year represented a material increase in the Part A charge for water users. However, the Authority notes that for

the first three years at least, a zero Part A charge will apply in Central Lockyer Valley tariff group (but Morton Vale Pipeline customers will pay all fixed charges).

The Authority acknowledges that the fixed charge for Morton Vale Pipeline is higher than current levels. However, the volumetric charge is lower by comparison. The increase in total water bill, where an irrigator uses no water, would be about 25% in 2013-14 compared to 2012-13 current levels. However, any irrigator using 30% or more of their WAE would have a reduction in the total water bill.

The recommended prices support high water use / productive irrigators (when water is available). In contrast, in increases the holding cost associated with WAE and therefore trading incentives (where trading is available) for inactive water users.

In response to submissions from QFF and Central Lockyer Valley WSS representatives, the Authority considers that the implications of recommended prices for on-farm viability are beyond the scope of the review.

As noted above in the Draft Report, the Authority also noted that the capacity of irrigators to pay 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 was considered to apply to the Seqwater irrigation review.

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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 which formed the basis of the April NSPs, for the years 2013-14 to 2035-36 in 2012-13 dollar terms.

Central Lockyer Valley WSS

Asset	*Year*	*Description*	*Total ($,000)*
Bill Gunn Dam	2028/29	Refurbish Access Road & Guard Rail	16
	2017/18	Refurbish Bulkhead Gate	20
	2014/15	Refurbish Electric Chain Hoist & Monorail	20
	2015/16	Refurbish Pump House	30
	2022/23	Replace Cables & Cableways	48
	2032/33	Replace Pump, 32Mm Subm Flygt	22
	2033/34	Replace Rear Perimeter Track	8
	2015/16	Replace Rising Main & Valves-Drainage	30
	2027/28	Replace Surface Water Meters	5
	2022/23	Replace Switchboard	25
	2017/18	Replace Water Level Recorder (In Main Embankment)	7
	2014/15	Replenish/replace the rip-rap Main Wall Embankment	25
	2015/16	Replenish/replace the rip-rap Main Wall Embankment	25
	2016/17	Replenish/replace the rip-rap Main Wall Embankment	25
Boreholes	2018/19	Refurbish Observation Bores	50
	2023/24	Refurbish Observation Bores	50
	2028/29	Refurbish Observation Bores	50
	2033/36	Refurbish Observation Bores	50
Clarendon Dam	2018/19	Refurbish Earthworks	10
	2028/29	Refurbish Earthworks	10
	2019/20	Refurbish Earthworks/Formation	50
	2013/14	Refurbish Embankment (Main Dam)	52
	2014/15	Refurbish Embankment (Main Dam)	52
	2015/16	Refurbish Embankment (Main Dam)	52
	2016/17	Refurbish Embankment (Main Dam)	52
	2017/18	Refurbish Embankment (Main Dam)	52
	2018/19	Refurbish Embankment (Main Dam)	52
	2023/24	Replace Access Roads	20
	2023/24	Replace Fencing (Boundary, Internal, Security)	165
	2023/24	Replace Grids And Gates	16
	2018/19	Replace Piezometers	26
	2021/22	Replace Surface Measurement	4
	2031/32	Replace Surface Measurement	4
	2021/22	Replace Telemetry	35
	2031/32	Replace Telemetry	35
Clarendon Diversion	2014/15	Investigate and repair Valve, 750Mm Butf Keystone	10
	2015/16	Refurbish Access Road	10
	2020/21	Refurbish Access Road	10

Asset	*Year*	*Description*	*Total ($,000)*
	2025/26	Refurbish Access Road	10
	2030/31	Refurbish Access Road	10
	2035/36	Refurbish Access Road	10
	2019/20	Refurbish Access Road To Weir R/Bk	5
	2034/35	Refurbish Access Road To Weir R/Bk	5
	2015/16	Refurbish and repair Control Gate	15
	2014/15	Refurbish Clarendon Diversion / Supply Channel	21
	2019/20	Refurbish Clarendon Diversion / Supply Channel	21
	2024/25	Refurbish Clarendon Diversion / Supply Channel	21
	2029/30	Refurbish Clarendon Diversion / Supply Channel	21
	2034/35	Refurbish Clarendon Diversion / Supply Channel	21
	2013/14	Refurbish Control Equipment	26
	2018/19	Refurbish Diversion Bank Protection Works	42
	2032/33	Refurbish Pump Well	21
	2017/18	Refurbish Redbank Ck Pump Station	21
	2032-33	Refurbish Redbank Ck Pump Station	21
	2014/15	Refurbish Switch Board	16
	2022/23		5
	2014/15	Refurbish Trash Screen (3 Off)	10
	2019/20	Refurbish Trash Screen (3 Off)	10
	2024/25	Refurbish Trash Screen (3 Off)	10
	2029/30	Refurbish Trash Screen (3 Off)	10
	2034/35	Refurbish Trash Screen (3 Off)	10
	2015/16	Refurbish Turn Outs	5
	2025/26	Refurbish Turn Outs	5
	2035/36	Refurbish Turn Outs	5
	2015/16	Refurbish Winch	10
	2022/23	Replace Access Road	192
	2023/24	Replace Access Road To Weir R/Bk	24
	2023/24	Replace Actuator, Mech	2
	2029/30	Replace Cable	10
	2028/29	Replace Control Equipment	311
	2024/25	Replace Electrical Control Building	11
	2033/34	Replace Gate Actuating Mechanism	26
	2025/26	Replace Outlet Valve	13
	2020/21	Replace Submersible Pump	50
	2019/20	Replace Switch Board	15
	2028/29		161
	2031/32	Replace Temporary Pump Platform	76
	2022/23	Replace Turn Outs	32
	2023/24	Replace Valve, 750Mm Butf Keystone	14
	2025/26	Replace Work And Access Platform	24
Clarendon Weir	2025/26	Replace -	7
	2025/26	Replace Outlet Valve	19

Asset	*Year*	*Description*	*Total ($,000)*
Gauging Stations	2022/23	Replace Gauging Stations-Central Lockyer	60
	2032/33	Replace Gauging Stations-Central Lockyer	60
Kentville Weir	2025/26	Refurbish Kentville Weir - 46.4Km	3
Laidley Creek	2035/36	Replace Outlet Pipe	4
Lake Dyer Diversion	2013/14	Refurbish Butterfly Valve At 3725.3M	15
	2033/34	Refurbish Butterfly Valve At 3725.3M	15
	2013/14	Refurbish Lake Dyer Diversion	6
	2033/34	Refurbish Lake Dyer Diversion	6
	2013/14	Refurbish Pipeline - Mscl	5
	2033/34	Refurbish Pipeline - Mscl	5
	2017/18	Replace Air Vent - 430M	10
Water Flow Meters	2025/26	Replace Water Meters	53
	2026/27	Replace Water Meters	53
	2027/28	Replace Water Meters	53
	2028/29	Replace Water Meters	53
	2029/30	Replace Water Meters	53
	2030/31	Replace Water Meters	53
	2031/32	Replace Water Meters	53
	2032/33	Replace Water Meters	53
	2033/34	Replace Water Meters	53
	2034/35	Replace Water Meters	53
	2035/36	Replace Water Meters	53
Wilson Weir	2025/26	Refurbish Wilson Weir - 61.3Km	3
	2021/22	Replace Outlet Valve	21
	2021/22	Replace Protection Works	64
Total			**3,457**

Morton Vale Pipeline

Asset	*Year*	*Description*	*Total*
Morton Vale Reticulation	2014/15	Refurbish Inlet Baulk	13
		Refurbish Trash Screen	18
	2022/23	Replace Ladders, Handrails & Platform	3
Water Flow Meters	2025/26	Replace Water Meters	14
	2026/27	Replace Water Meters	14
	2027/28	Replace Water Meters	14
	2028/29	Replace Water Meters	14
	2029/30	Replace Water Meters	14
	2030/31	Replace Water Meters	14
	2031/32	Replace Water Meters	14
	2032/33	Replace Water Meters	14
	2033/34	Replace Water Meters	14
	2034/35	Replace Water Meters	14
	2035/36	Replace Water Meters	14
Total			**188**