QUEENSLAND COMPETITION AUTHORITY

Draft Report

SunWater
Irrigation Price Review: 2012-17
Volume 2
Lower Mary Distribution System

November 2011

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SUBMISSIONS

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

Written submissions should be sent to the address below. While the Authority does not necessarily require submissions in any particular format, it would be appreciated if two printed copies are provided together with an electronic version on disk (Microsoft Word format) or by e-mail. Submissions, comments or inquiries regarding this paper should be directed to:

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The **closing date** for submissions is **23 December 2011**.

Confidentiality

In the interests of transparency and to promote informed discussion, the Authority would prefer submissions to be made publicly available wherever this is reasonable. However, if a person making a submission does not want that submission to be public, that person should claim confidentiality in respect of the document (or any part of the document). Claims for confidentiality should be clearly noted on the front page of the submission and the relevant sections of the submission should be marked as confidential, so that the remainder of the document can be made publicly available. It would also be appreciated if two copies of each version of these submissions (i.e. the complete version and another, excising confidential information) could be provided. Again, it would be appreciated if each version could be provided on disk. Where it is unclear why a submission has been marked "confidential", the status of the submission will be discussed with the person making the submission.

While the Authority will endeavour to identify and protect material claimed as confidential as well as exempt information and information disclosure of which would be contrary to the public interest (within the meaning of the *Right to Information Act 2009 (RTI)*), it cannot guarantee that submissions will not be made publicly available. As stated in s187 of the *Queensland Competition Authority Act 1997* (the QCA Act), the Authority must take all reasonable steps to ensure the information is not disclosed without the person's consent, provided the Authority is satisfied that the person's belief is justified and that the disclosure of the information would not be in the public interest. Notwithstanding this, there is a possibility that the Authority may be required to reveal confidential information as a result of a RTI request.

Public access to submissions

Subject to any confidentiality constraints, submissions will be available for public inspection at the Brisbane office of the Authority, or on its website at www.qca.org.au. If you experience any difficulty gaining access to documents please contact the office (07) 3222 0555.

Information about the role and current activities of the Authority, including copies of reports, papers and submissions can also be found on the Authority's website.

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GLOSSARY

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

EXECUTIVE SUMMARY

Ministerial Direction

The Authority has been directed by the Minister for Finance and The Arts and Treasurer for Queensland to recommend irrigation prices to apply to particular SunWater water supply schemes (WSS) from 1 July 2012 to 30 June 2017 (the 2012-17 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 the Lower Mary Distribution System for the 2012-17 regulatory period are outlined in Table 1 together with actual prices since 1 July 2006.

Table 1: Medium Priority Prices for the Lower Mary Distribution System ($/ML)

	Actual 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***
Lower Mary River (Mary Barrage) (Unbundled)											
Fixed (Part A)	8.28	8.52	8.92	9.20	9.48	9.84	12.61	12.92	13.25	13.58	13.92
Volumetric (Part B)	8.83	9.09	9.52	9.82	10.12	10.48	1.94	1.98	2.03	2.09	2.14
Lower Mary Channel (Unbundled)											
Fixed (Part C)	26.04	28.36	29.80	30.76	31.68	34.80	19.87	22.42	25.08	27.86	30.76
Volumetric (Part D)	15.69	17.25	18.15	18.72	19.29	19.98	60.24	61.75	63.29	64.87	66.49
Lower Mary Channel (Bundled)											
Fixed (Part A)	34.32	36.88	38.72	39.96	41.16	44.64	nr	nr	nr	nr	nr
Volumetric (Part B)	24.52	26.34	27.67	28.54	29.41	30.46	nr	nr	nr	nr	nr

Note: nr – not relevant. Prior to 2012-17, channel tariffs were a bundled price for bulk and distribution services. Thus, the fixed Part C tariffs for 2006-12 represent a notional unbundled channel price calculated by deducting Part A Mary Barrage prices from (bundled) Part A Channel prices. Source: Actual Prices (SunWater, 2011al) and Recommended Prices (QCA, 2011).

Although prices for bulk costs of the Lower Mary Distribution System are presented above, the review of the underlying bulk costs is set out in detail as part of a separate report on the Lower Mary WSS.

The Authority's recommended termination fees to apply to the Lower Mary Distribution System in 2012-17 are outlined in Table 2 together with actual termination fees since 1 July 2008.

Table 2: Termination Fees ($/ML)

	Actual Prices				*Recommended Prices*				
	2008-09	***2009-10***	***2010-11***	***2011-12***	***2012-13***	***2013-14***	***2014-15***	***2015-16***	***2016-17***
Lower Mary Channel to:									
Lower Mary River (Tinana Barrage & Teddington Weir)	299.56	226.84	257.04	311.91	1,082.05	1,109.10	1,136.83	1,165.25	1,194.38
Lower Mary River (Mary Barrage)	266.80	263.90	298 94	358.95	1,269.25	1,300.98	1,333.51	1,366.85	1,401.02

Source: Actual Prices (SunWater, 2011am) and Recommended Prices (QCA, 2011).

Draft Report

Volume 1 of this Draft 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. Also relevant is the Draft Report on Lower Mary WSS.

Consultation

The Authority has consulted extensively with SunWater and other stakeholders throughout this review. Consultation has included: inviting submissions from, and meeting with, interested parties; the commissioning of independent reports on key issues; and, publication of Issues Papers.

Comments on the Draft Report are due by **23 December 2011.** All submissions will be taken into account by the Authority in preparing its Final Report due by 30 April 2012.

1. LOWER MARY DISTRIBUTION SYSTEM

1.1 System Description

The Lower Mary Distribution System is located downstream of Tiaro along the Mary River, and downstream of Teddington Weir on Tinana Creek[1]. The system has 79 irrigation customers. The medium priority water access entitlements (WAEs) are outlined in Table 1.1 (there is no high priority WAE held by customers). To deliver water to these customers, SunWater owns WAEs for distribution losses.

Table 1.1: Water Access Entitlements

Customer Group	*Irrigation WAE (ML)*	*Total WAE (ML)*
Medium Priority	9,952	9,952
Medium Priority Distribution Losses	4,588	4,588
High Priority	0	0
High Priority Distribution Losses	324	324
Total	14,864	14,864

Source: Synergies Economic Consulting (2010).

1.2 Distribution System Infrastructure[2]

The Lower Mary Distribution System diverts water from Mary River to three sub-systems:

(a) Copenhagen Bend system;

(b) Owanyilla Main Roads system; and

(c) Walker Point system.

The system consists of four pump stations, 50 km of channels and four pipelines.

Copenhagen Bend system

The Copenhagen Bend system supplies water to customers on both sides of the Mary River downstream of the Mary Barrage. The Copenhagen Bend pump station has two equally sized submersible pumps capable of pumping 65 ML/day and lifts water from the Mary Barrage into the Copenhagen balancing storage. In turn, the storage supplies 7.6km of pipeline on the left bank and 9km of pipeline on the right bank of the Mary River Barrage.

Owanyilla Main Road system

The Owanyilla Diversion supplies water for the Main Road system and supplements the Tinana Barrage and Teddington Weir. The system has two pump stations: Owanyilla and Main Road. The Owanyilla pump station is located around 7km upstream of the Mary River Barrage and it has two pumps, which together discharge 243 ML/day.

[1] Note that the Upper Mary water supply scheme (WSS) is now owned and operated by Seqwater. Further, Teddington Weir is owned and operated by Fraser Coast Regional Council.

[2] Information in this section is drawn from SunWater's NSP and Aurecon (2011) which relies on SunWater reports.

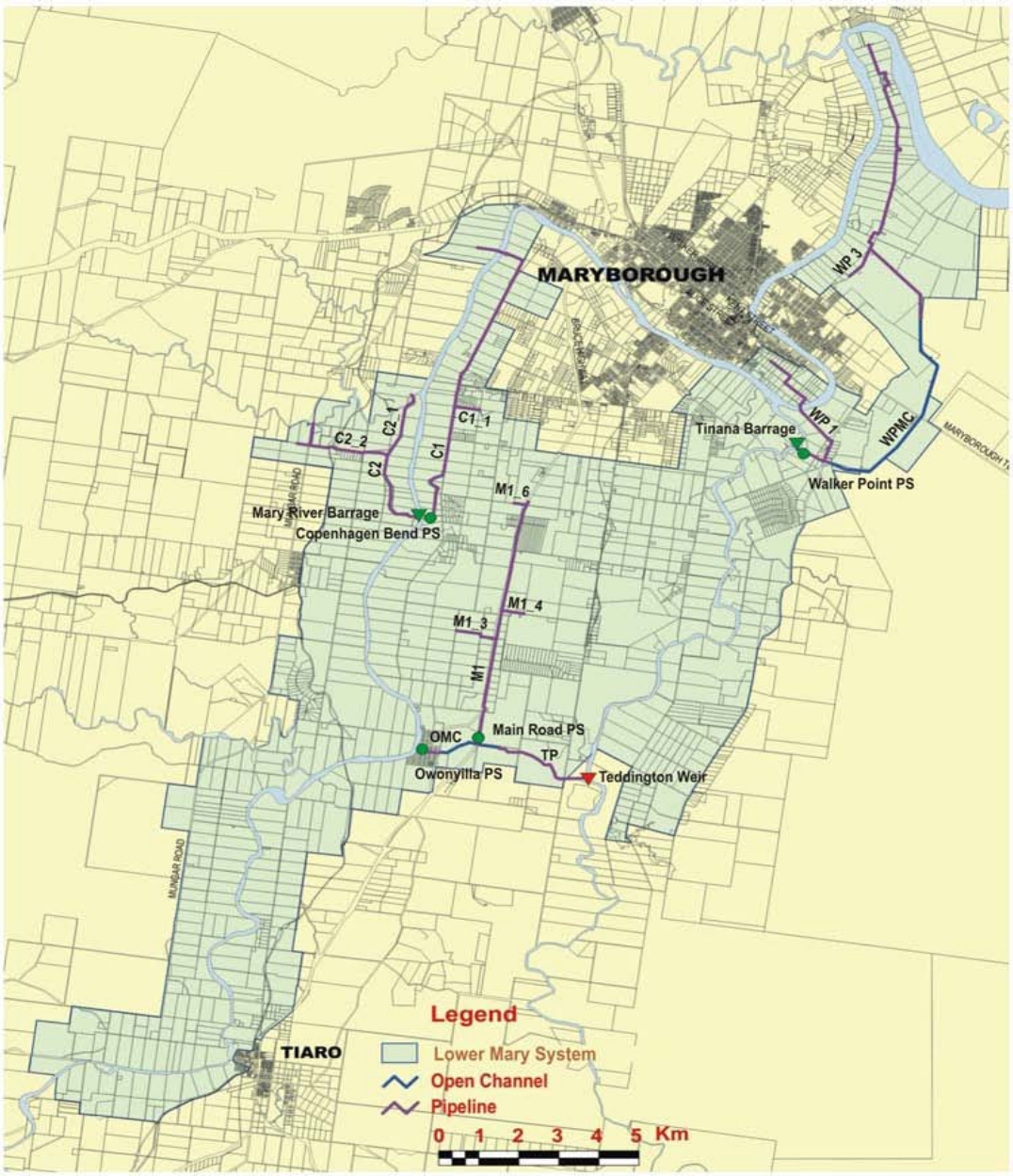
The Main Road Pump Station uses water from the Owanyilla channel and has two pumps which when used together distributes 62 ML/day to farms in the Glenorchy area.

Walker Point system

The Walker Point system draws from the Tinana barrage. The Walker Point Pump Station has two submersible pumps with provision for a third. When the two pumps are used together the station supplies 75 ML/day.

Figure 1.1 shows the location of the Lower Mary Distribution System and key infrastructure.

Figure 1.1: Lower Mary Distribution System Locality Map



Source: SunWater (2011).

1.3 Network Service Plans

The Lower Mary Distribution System network service plan (NSP) presents SunWater's:

(a) existing service standards;

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

(c) risks relevant to the NSP and possible reset triggers.

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

1.4 Consultation

The Authority has consulted extensively with SunWater and other 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 (two rounds of consultation);

(c) published notes on issues arising from each round of consultation;

(d) commissioned independent consultants to prepare issues papers and review aspects of SunWater's submissions;

(e) published all issues papers and submissions on its website; and

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

The Authority has also received a number of submissions from stakeholders on matters such as capacity to pay, rate of return on existing assets, contributed assets, nodal pricing, national metering standards and whether or not to recover recreation management costs from SunWater customers.

Following the amendment to the original Ministerial Direction of 19 March 2010 and further advice from the Minister of 23 September 2010 and 9 June 2011 these issues are outside the scope of the current investigation and have therefore not been addressed.

The Ministerial Direction forms **Appendix A** to Volume 1.

2. REGULATORY FRAMEWORK

2.1 Introduction

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

During the negotiations that preceded the 2006-11 price paths, the Lower Mary WSS Tier 2 group (including representatives from the distribution system) indicated that they were in favour of retaining the existing price cap regulatory arrangement. In the 2011-12 interim price period, the price cap arrangement was continued.

2.2 Stakeholder Submissions

SunWater

SunWater identified a range of generic risks considered relevant to allowable costs across all schemes (see Volume 1). SunWater also considered that it should not bear the risk of water availability (volume risk). The following are scheme specific risks identified by SunWater in the NSP associated with the Lower Mary Distribution System:

(a) the possible removal of regulated electricity tariffs which could have a significant impact on the cost of electricity;

(b) the introduction of schemes relating to the reduction of greenhouse gases that may have implications for electricity prices, or energy efficiency regulation that results in a net increase in costs;

(c) the introduction of water planning and management charges in respect of SunWater's distribution loss entitlements for channel distribution systems;

(d) damage to SunWater's assets, to the extent that such damage is not recoverable under insurances;

(e) levies or charges made in relation to the regulation of irrigation prices by the Authority;

(f) metering costs related to changes in regulatory standards;

(g) the availability of chemicals to control submerged weeds and algae in channels; and

(h) outbreak of noxious weeds.

Other Stakeholders

No other stakeholders have commented on this matter.

2.3 Authority's Analysis

General Risks

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

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.	SunWater 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.	SunWater has no substantive capacity to augment bulk infrastructure (for which responsibility rests with Government). SunWater does have some capacity to manage distribution system infrastructure and losses provided it can deliver its WAEs.	SunWater should bear the risks, and benefit from the revenues, associated with reducing distribution system losses.
Market Cost Risks	Risk of changing input costs.	SunWater 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 SunWater (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 (2011).

Consistent with the Authority's allocation of risks (Table 2.1), it is proposed that risks identified by SunWater in items (a), (b), (d), (g) and (h) above will be dealt with as an end-of-period adjustment, or price trigger or cost pass through upon application by SunWater or customers. Any costs of the nature of (c) would be passed through, subject to a consideration of their materiality.

It should be noted that anticipated prudent and efficient electricity costs are reviewed as part of the Authority's analysis of efficient operating costs, and it is only if they are materially different to those forecast would there be a case to consider price triggers or cost pass throughs.

No levies or charges (e) are to be applied by the Authority as a result of this irrigation price review. Metering upgrades (f) are outside the scope of this investigation.

3. PRICING FRAMEWORK

3.1 Tariff Structure

Introduction

In the 2006-11 price paths, tariffs incorporated bulk and distribution costs into a bundled two-part tariff. During the 2005-06 price negotiations, it was generally agreed to adopt 70:30 ratio of fixed costs to variable costs. For the Lower Mary Distribution System tariff structure, the Part A fixed charge was set to recover 70% of revenue while the Part B variable charge was set to recover 30% of revenue.

Stakeholder Submissions

SunWater

For the 2012-17 regulatory period, SunWater proposed to unbundle charges so that the recovery of distribution costs is separated from bulk water costs.

SunWater (2011d) submitted that the fixed charge should recover fixed costs and the variable charge should recover variable costs.

Other Stakeholders

During the second round of stakeholder consultations, irrigators noted that there will be a significant impact on the scheme if fixed charges apply to irrigators regardless of whether they use their allocations or not.

Authority's Analysis

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

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

Unbundling of tariffs further promotes cost reflectivity of charges.

The Authority's analysis of which service delivery costs are fixed, and which are variable, is addressed in a subsequent chapter.

In response to comments raised during stakeholder consultations, the Authority notes that under current legislative and contractual arrangements (and the Ministerial Direction), customers must bear all the costs of water supply incurred by SunWater, irrespective of whether it is made available or not (provided the costs of supply are efficient and prudent).

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

The volumes of permanent and temporary water traded for the Lower Mary WSS are identified in Table 3.1.

Table 3.1: Permanent and Temporary Water Traded (ML)

	2002-03	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*	*2008-09*	*2009-10*
Permanent	0	0	0	0	0	0	0	0
Temporary	3463	2035	2092	1659	5184	606	163	259

Note: The trading data above reflects total trading in the bulk and distribution system combined. Source: SunWater Annual Reports (2003-2010g) and Queensland Valuation Services (2010).

The Authority recognises that a change in tariff structure may impact the value of entitlements, and therefore incentives to trade. This matter is addressed further below in the context of pricing recommendations.

3.2 Termination (Exit) Fees

Introduction

SunWater charges termination fees when a distribution system WAE is permanently transferred to the river. Without a termination fee, SunWater would have insufficient revenue to cover that customer's share of fixed costs.

Stakeholder Submissions

SunWater

In 2011-12, SunWater charged the exiting user the present value of 10 years of annual fixed distribution charges or 9.4 times the distribution system fixed charge, which SunWater submitted is consistent with the Australian Competition and Consumer Commission (ACCC) guidelines. SunWater treated such fees as revenue offsets for 10 years with any subsequent revenue shortfall recovered from remaining distribution system customers.

A comparison of current and proposed termination fees is provided in Tables 3.2 and 3.3 below.

Other Stakeholders

CANEGROWERS (2011c) submitted that if SunWater sells channel loss water into the bulk system then it should pay an exit fee like all other customers.

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 a SunWater or, as currently occurs, to remaining customers. Further, in structuring the termination fee there should be an incentive to SunWater to reduce costs following a customer's departure.

As proposed by SunWater, 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 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 five year regulatory period, 24 years of data will be incorporated.

The Authority has 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, SunWater has an incentive to reduce costs or seek out new customers.

The Authority's approach results in a multiple of about 13.8 times the unbundled Part C cost-reflective tariff for the distribution system (compared to the ACCC's guidance of up to 11 times the fixed charge). This compares with SunWater's 2011-12 termination fees which are 9.4 times the 2011-12 distribution system fixed charge. These multiples all include GST.

SunWater's past termination fees and the Authority's recommended termination fees, are detailed in Table 3.2 and Table 3.3 below. Termination fees relevant to the Lower Mary River WSS are set out in that report.

Table 3.2: Lower Mary Channel to Lower Mary River (Tinana Barrage & Teddington Weir) Termination Fees ($/ML)

	Actual Prices				*Recommended Prices*				
	2008-09	***2009-10***	***2010-11***	***2011-12***	***2012-13***	***2013-14***	***2014-15***	***2015-16***	***2016-17***
Termination Fee	299.56	226.84	257.04	311.91	1,082.05	1,109.10	1,136.83	1,165.25	1,194.38
Change from previous year (%)		-24.3%	13.3%	21.3%	246.9%	2.5%	2.5%	2.5%	2.5%

Source: SunWater (2011).

Table 3.3: Lower Mary Channel to Lower Mary River (Mary Barrage) Termination Fees ($/ML)

	Actual Prices				*Recommended Prices*				
	2008-09	***2009-10***	***2010-11***	***2011-12***	***2012-13***	***2013-14***	***2014-15***	***2015-16***	***2016-17***
Termination Fee	266.80	263.90	298.94	358.95	1,269 25	1,300.98	1,333 51	1,366.85	1,401.02
Change from previous year (%)		-1.1%	13.3%	20.1%	253.6%	2.5%	2.5%	2.5%	2.5%

Source: SunWater (2011).

In response to CANEGROWERS' submission that SunWater should pay a termination fee if distribution loss WAE are sold to river users, the Authority considers that the purpose of termination fees is to compensate SunWater for a loss of future revenue associated with fixed distribution system costs. Fixed distribution costs are not allocated to distribution loss WAE, but only fixed bulk costs, which are recovered from distribution system customers.

Further, if the distribution loss WAE is transferred to the river, the new bulk customer will pay the bulk costs associated with the WAE, instead of being paid for by distribution system customers. SunWater's total revenue is unchanged and the exit of a distribution loss WAE will not materially reduce distribution costs. Therefore, a termination fee should not apply in these circumstances.

The Authority notes that as distribution system customers are allocated the bulk cost of distribution loss WAE, a transfer of these WAE to a bulk customer would be expected to decrease distribution system costs.

3.3 Water Use Forecasts

Introduction

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

In the 2006 review, up to 25 years of historical data was collated for nominal WAE, announced allocations and volumes delivered. The final water usage forecasts were based on the long term average actual usage 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 key impacts on water usage, such as changes in industry conditions, impact of trading and scheme specific issues (SunWater, 2006a).

For the Lower Mary Distribution System, SunWater (2006b) assumed a water usage forecast of 60% of the WAE in the channel system. Water usage for high and medium priority irrigation WAE were not separately identified (SunWater, 2006b).

Stakeholder Submissions

SunWater

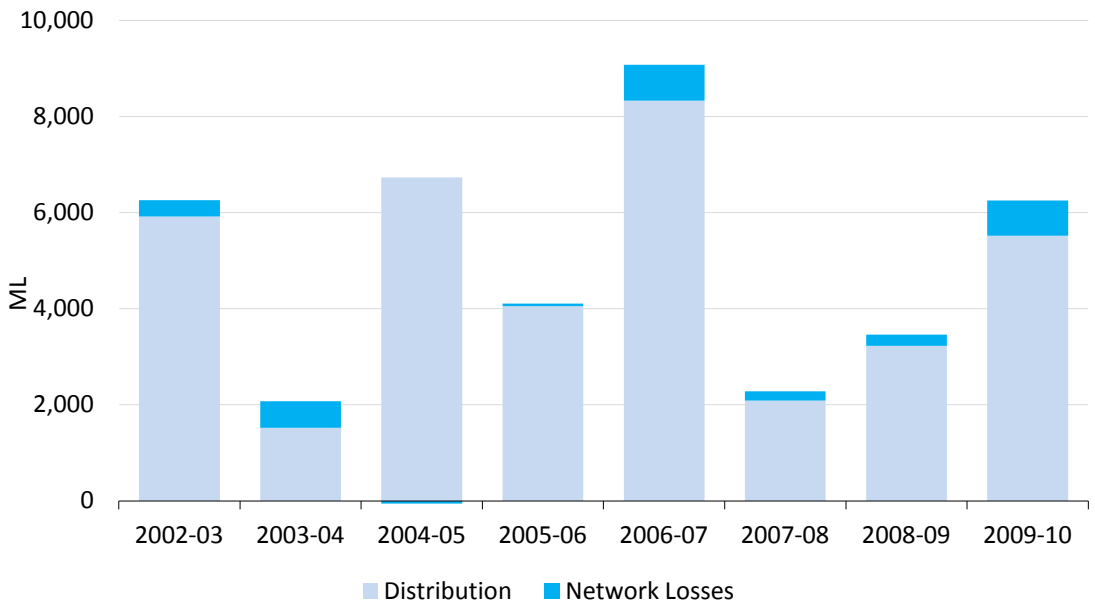
The available supply of water is determined by the announced allocations which are set according to rules contained in the Resource Operations Plan (ROP).

SunWater (2011d) has noted that demand forecasts are not relevant for price setting under SunWater's proposed tariff regime.

SunWater's usage forecast for 2012-17 are made having regard to historic averages over an eight-year period and the usage forecast applied for the 2006-11 price path. The forecast use for the distribution system is 50% of current WAE and medium priority distribution losses, plus 100% of high priority losses.

Figure 3.1 shows the historic usage information for the Lower Mary Distribution System submitted by SunWater (2011). SunWater stated that over the past eight years, total water use in the distribution system has been 33% of current WAE.

Figure 3.1: Water Usage for the Lower Mary Distribution System



Source: SunWater (2011).

Other Stakeholders

No other stakeholders have commented on this matter.

Authority's Analysis

As noted in Volume 1, the Authority does not consider water use forecasts are relevant to establishing the cost-reflective prices for SunWater schemes.

Nonetheless, the Authority has considered past water use in calculating cost-reflective volumetric charges that recover variable costs (see Chapter 6 – Draft Prices).

Under the Direction, the Authority must recommend prices that maintain revenues in real terms where current prices are above the level required to recover prudent and efficient costs. For this purpose, the Authority has considered forecast irrigation water use (see Chapter 6 – Draft Prices).

3.4 Tariff Groups

The amended Ministerial Direction specifically directs the Authority to adopt the tariff groups proposed in SunWater's NSPs.

Stakeholder Submissions

SunWater

In its NSP, SunWater does not propose to change the current tariff groups, other than unbundling of bulk water and distribution system charges. The Lower Mary Distribution scheme has only one channel tariff grouping with supply sourced from Mary Barrage.

Other Stakeholders

CANEGROWERS (2011a) submitted there were changes in the WAE within the Lower Mary Distribution System and bulk tariff groups since the previous price review.

Authority's Analysis

The Authority notes that the issue raised by CANEGROWERS has been addressed in the Lower Mary WSS Draft Report. In summary, the Authority has adopted the current NSP WAE data which corresponds to the current Interim Resource Operations Licence (IROL) and are consistent with SunWater's billing database.

In accordance with the Ministerial Direction, the Authority will adopt a single Lower Mary Channel tariff group.

3.5 Owanyilla Pump Station and Main Channel[3]

Submissions

SunWater

SunWater submitted that the Owanyilla Pump Station and Main Channel perform a bulk water function, as they supplement the Tinana Barrage and Teddington Weir. The Owanyilla Pump Station and Main Channel form part of the assets of the Lower Mary Distribution System (see Figure 1.1).

SunWater submitted that hydrological modelling indicates 27% of water transported through the Owanyilla pump station and main channel relates to bulk water for the Tinana Barrage and Teddington Weir. SunWater further clarified that the 27% is based on Integrated Quantity and Quality Model (IQQM) modelling of flows from the Mary to Tinana Creek consistent with likely ROP outcomes (the ROP was not finalised as at the date of SunWater's advice).

On this basis, SunWater submitted that 27% of the Owanyilla pump station and main channel costs should be included in the Tinana and Teddington Weir bulk water costs and deducted from the (distribution) cost base.

SunWater has not estimated costs separately for Tinana Barrage and Teddington Weir tariff group on the basis that all bulk assets make up the bulk WSS. SunWater noted that the water sharing rules aggregate the bulk water storages for making announced allocations.

Rather, SunWater estimated a cost transfer from distribution to bulk of $134,000 for 2011-12, including operating and electricity costs and a share of the renewals annuity for the pump station and main channel (see Table 3.3 below). However, SunWater did not include this cost transfer in its proposed cost base in the Lower Mary NSP (although it was separately identified as a proposed adjustment).

[3] This section is replicated in the Lower Mary WSS Draft Report as it affects both bulk and distribution pricing.

Table 3.3: Pump Station and Main Channel Cost Transfer (Real $'000)

	2011-12	*2012-13*	*2013-14*	*2014-15*	*2015-16*
Pump station and Main Channel cost allocation	134	137	140	143	147

Source: SunWater (2011).

SunWater subsequently advised that the Owanyilla costs attributable to bulk water should be allocated between high and medium priority users on the basis of the Headworks Utilisation Factor (HUF), with 58% of costs attributed to high priority users.

Other Stakeholders

CANEGROWERS (2011a) submitted that the use of channel infrastructure for the bulk system needs to be reviewed. CANEGROWERS submitted that if high priority customers or any deemed bulk customers are using any part of the channel infrastructure they should be paying the same channel charge as growers within the channel system for the proportion of their allocation which is typically delivered through the distribution system.

CANEGROWERS (2011a) noted that in the Lower Mary there is a pump station and channel which are used by High Priority (bulk) customers and some customers with a different tariff not in the distribution system. These customers are only asked to pay part of the costs of running these (distribution) assets within the channel system rather than all channel costs. CANEGROWERS suggest that for the proportion of water typically used by these water users via the distribution system, these water users should pay the same channel price as all other customers.

The Maryborough Sugar Factory (MSF, 2010) indicated support for the continued application of postage stamp pricing to irrigation water, that is, with no differentiation within tariff groups and to maintain the same for each user irrespective of nominal allocation, water use or demand distribution. The MSF commented that this is more consistent with capacity-to-pay of all users within the scheme. The MSF stated its support for the differentiation between river and channel/pipeline tariffs (location tariffs).

MSF (2011) questioned whether the Authority has verified SunWater's hydrological modelling to arrive at the figure of 27% above.

Authority's Analysis

As a general principle, the Authority considers that prices should reflect the costs of service provision. If a distribution asset is used by both bulk and distribution customers, it is appropriate that bulk customers be allocated a share of the costs commensurate with their relative usage of the asset.

As to whether the Owanyilla pump station and main channel is used by bulk customers in the Tinana Barrage and Teddington Weir tariff group, the Authority notes that:

(a) SunWater's NSPs and further advices are that the Owanyilla pump station and channel provide a bulk water function and this is supported by stakeholder submissions;

(b) under the Mary Basin ROP released on 11 September 2011, bulk water transfers from the Lower Mary River WSS to Teddington Weir are permitted and must occur when storages are at certain levels (section 113 sets out the rules for bulk water transfer). The bulk transfer volume must not exceed a given level in any water year; and

(c) in the previous price review, additional costs were allocated to the Tinana Barrage and Teddington Weir tariff group. The lower bound charge for the Tinana Barrage and Teddington Weir tariff group was $20.23/ML (in 2005/06 dollars) in total – 32% higher than the Mary Barrage lower bound charge of $15.31/ML. However, as the actual Mary Barrage charge ($16.62/ML) was above lower bound it was maintained in real terms and the current actual price differential is 22%. Taking into account different average usage as forecast in 2006 and tariff structures, the revenue per ML was 40% higher for the Tinana/Teddington tariff group.

On the basis of the NSP, ROP and stakeholder comments, the Authority accepts that the Owanyilla pump station and channel provides a bulk water function.

To achieve cost-reflectivity, a portion of the relevant cost should be allocated to bulk water users in the Tinana Barrage/Teddington Weir tariff group.

The Authority has accepted the estimate of relative usage deriving from hydrological modelling using the IQQM program, which indicates 27% of water transported through the Owanyilla pump station and main channel relates to bulk water in the Tinana Barrage/Teddington Weir tariff group.

The IQQM is a DERM computer program that simulates daily stream flows, flow management, storages, releases, instream infrastructure, water diversions, water demands and other hydrologic events in the plan area. The IQQM is used to assess consistency with the environmental flow and water security objectives of the Mary Basin Water Resource Plan.

A measure of relative use deriving from hydrological modelling is preferred to maintaining the current price differentials which may reflect a range of different approaches taken in the previous price path.

As the Mary Basin ROP has recently been finalised, the Authority considers that SunWater should review its estimate of water use deriving from the IQQM program that is consistent with the revised ROP and provide evidence of this review and its outcomes to the Authority as soon as possible following the release of the Draft Report. Pending this advice, the Authority is proposing to adopt the current estimate.

In summary, the Authority proposes to adopt the 27% allocation of Owanyilla pump station and main channel costs to the Tinana Barrage/Teddington Weir bulk tariff group.

The Authority considers these costs should be allocated between high and medium priority bulk users in the same manner as other bulk costs (the following chapter addresses SunWater's proposed HUF methodology). The Authority has no evidence to suggest that only high priority bulk water users should pay for these costs (as proposed by CANEGROWERS).

For clarity, and in response to CANEGROWERS, the Authority does not consider that Tinana Barrage/Teddington Weir customers should pay the channel charge, as to do so would reduce the cost-reflectivity of current tariff groups. These customers do, however, meet a share of the cost of Owanyilla channel and pipeline reflecting their level of usage as proposed by SunWater. The Authority supports the unbundling of bulk and distribution tariffs. In response to MSF, the separate river and channel segment tariffs will remain in place, as per the Direction Notice.

The termination fees for sales between the two bulk tariff groups are dealt with in the Lower Mary WSS Draft Report.

3.6 Distribution Losses

Introduction

Distribution losses are incurred in the delivery of water to the Lower Mary Distribution System customers. SunWater holds WAEs to account for losses involved in delivering water to customers in the distribution system.

In the previous price path, the costs of distribution losses were allocated to all distribution system users (SunWater, 2006a).

Stakeholder Submissions

SunWater

SunWater (2011w) submitted that distribution loss WAE should be assigned bulk water costs (and water charges) due to the need to store these entitlements using headworks like any other types of WAEs. It also submitted that these costs should be recovered from customers of the distribution system (by including them in that system's revenue requirement) on the basis that they are needed to provide the distribution service.

The projected usage for distribution losses in the NSP are based on the assumption that 100% of high priority loss WAEs is used each year and that medium priority loss WAEs reflect the same usage percentage as other medium priority WAEs in the distribution system. Therefore, in the case of the Lower Mary Distribution System, high priority loss WAE is assumed to be 324 ML per annum and medium priority loss WAE is estimated at 50% of 4,588 ML or 2,294 ML per annum.

Other Stakeholders

CANEGROWERS (2011a) noted distribution loss allocations of 4,900 ML which is higher than the historical losses of around 300 ML on average and assumed average losses going forward of 2,900 ML. CANEGROWERS noted the considerable variation between these numbers which is likely to have a significant impact on prices.

CANEGROWERS submitted that the approach to allocating bulk costs to channel customers for distribution losses needs to be reviewed. At the very least, the extra allocation of costs should reflect actual losses not allocations which do not match reality. CANEGROWERS further submitted that it is more appropriate not to allocate costs for distribution losses since river losses are ignored.

MSF (2011) questioned how SunWater can justify the 2,294 ML per annum being charged to medium priority users when SunWater cannot even quantify the losses. Further, MSF questioned why bulk/river customers do not pay for the losses.

MSF questioned the incentives for SunWater to reduce losses, given that irrigators pay for the losses. MSF submitted that it would like to use actual losses as a basis for cost recovery. However, MSF stated that they should not be charged any losses as they pay the electricity cost related to water pumping.

Authority's Analysis

As noted in Volume 1, the Authority's general view is that distribution customers should pay for all distribution losses as identified in the distribution loss WAEs.

In response to irrigators' comments, the Authority notes that, historically, SunWater have not used all distribution loss WAE in delivering water to customers. In the Lower Mary distribution system, actual losses have been less than 15% of loss WAE. This variation between actual losses water released and loss WAE is due to two factors.

Firstly, it is due to the management of water releases under a system of announced allocations. In this regard, SunWater each year announces the portion of WAE available to customers (the announced allocation) based on the level of water in the WSS storages. Where there is an announced allocation of 70% for medium priority WAE it also applies to medium priority loss WAE. So in that year, up to 70% of the loss WAE can only be released. This system explains in part, why actual losses released cannot always equate to the full loss WAE.

Secondly, the variation between actual loss water released and loss WAE may be due to an excessive holding of loss WAE. The Authority considers that, in principle, distribution system customers should not pay for distribution loss WAEs held by SunWater in excess of that needed to meet actual loss releases required as SunWater could benefit from their sale. In the Lower Mary distribution system, it would appear that SunWater is holding excess WAE.

It is noted that DERM as resource regulator has progressively confirmed the distribution loss volumes through the water resource planning processes. Nevertheless, where it becomes evident that there is a sustained difference between the loss WAE and actual losses, the loss WAE should immediately be reviewed by DERM.

Pending any finding by DERM that current loss WAEs are excessive, the Authority accepts the current loss WAE. In order for SunWater to recover all prudent and efficient costs, all costs related to WAE should be recovered from customers. The Authority recommends that distribution prices be calculated on the basis of total loss WAE.

In relation to MSF's additional comments:

(a) SunWater has quantified the actual losses in the Lower Mary distribution system (Table 4.5 in the Volume 1 report);

(b) distribution loss WAE are held by SunWater for the express purpose of supplying distribution system customers. Therefore, distribution system customers should be allocated the relevant costs. Bulk (river) customers have no institutional right to the increased availability of supply implied by any excess of losses WAE over actual released losses, although they may receive some (difficult to measure) benefit. Distribution losses are prescribed to the distribution system only, and the water planning framework does not recognise any benefit to river customers;

(c) SunWater may, in certain circumstances sell its distribution loss WAE. Therefore, SunWater has some incentive to reduce losses, and the amount of distribution loss WAE. Further, while there may be less incentive for SunWater to reduce losses, due to costs being met by users, the system losses in the Lower Mary are already relatively low when compared to other distribution systems; and

(d) electricity costs are still incurred for water lost in the distribution system and are part of the service delivery cost.

The Authority's proposed treatment of distribution losses is consistent with that of the preceding 2006-11 price path.

4. RENEWALS ANNUITY

4.1 Introduction

Ministerial Direction

Under the Ministerial Direction, the Authority is required to recommend a revenue stream that allows SunWater 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 services provided by SunWater to its customers.

Previous Review

In 2000-06 and 2006-11, a renewals annuity approach was used to fund asset replacement for SunWater WSSs.

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

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

(b) an asset restoration reserve (ARR) to manage the balance of the unspent (or overspent) renewals annuity (including interest).

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 high and medium priority users was based on Water Pricing Conversion Factors (WPCFs). Separate ARR balances were not identified for bulk and distribution system.

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. SunWater's renewals expenditure and ARR balances include direct, indirect and overhead costs (unless otherwise specified).

The key issues for the 2012-17 regulatory period are:

(a) the establishment of the opening ARR balance (at 1 July 2012), which requires:

  (i) whether renewals expenditure in 2007-11 was prudent and efficient. This affects the opening ARR balance for the 2012-17 regulatory period;

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

  (iii) the extension of the opening ARR balance (calculated for 1 July 2011) to 1 July 2012 to account for the adjusted timelines specified in the amended Ministerial Direction;

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

(c) the methodology for apportioning bulk and distribution renewals between medium and high priority WAEs; and

(d) the methodology to calculate the renewals annuity.

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

The Authority notes that SunWater has estimated that it has under management about 50,000 assets relevant to irrigators and, given this number of assets, has developed an asset planning methodology designed to cost-effectively identify assets requiring renewal or refurbishment.

Some of the assets were renewed during the 2006-11 price paths. Others are eligible for renewal over the 2012-17 regulatory period. Depending on their asset life, some are renewed several times during the Authority's recommended 20-year planning period.

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

The Authority initially relied on its four principal scheme consultants: Arup, Aurecon, GHD and Halcrow to identify and comment upon SunWater's renewals expenditure items. However, the Authority's four consultants expressed concerns about the lack of timely information relating to the past and proposed expenditures at the time of their reviews.

Subsequently, the Authority liaised directly with SunWater to obtain further information, and commissioned Sinclair Knight Merz (SKM) to address material expenditure items (that is, those renewals item which represented more than 5% of the present value of forecast expenditure) and/or those of particular concern (usually in response to customers' submissions). Across all schemes, a total of 36 past and forecast renewals items were reviewed by SKM.

The Authority's assessment of the prudency and efficiency of proposed renewals expenditures therefore draws upon the contributions of all of these sources as detailed below.

4.2 SunWater's Opening ARR Balance (1 July 2006)

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

Submissions

SunWater

SunWater submitted that the opening balance for the Lower Mary WSS (including the Lower Mary Distribution System) was negative $973,000.

Other Stakeholders

CANEGROWERS (2011a) submitted that the unbundling of the starting renewals balance for bulk versus distribution system is an interesting process. CANEGROWERS submitted that given that there may or may not be a relationship between spending from 2007-35 and spending from 2000-06, it is difficult to see why this process was chosen. CANEGROWERS noted that this is especially the case when the renewals spend appears to be quite variable for some schemes and historical and future spending patterns may be very different between bulk and distribution system for some schemes.

CANEGROWERS noted that in schemes where historical and future spending are even, this methodology may be reasonable but for other schemes with much more variable spending the chosen methodology will not suffice.

Authority's Analysis

The Authority has accepted SunWater's unbundled opening ARR balance for Lower Mary Distribution System of negative $888,000.

The Authority's unbundled ARR balance reflects SunWater's proposed methodology for the separation of bulk and distribution system assets, which takes into account past and future renewals expenditure.

In October 2011, Indec advised that it had uncovered actual renewals expenditure for 2000-06. The Authority has not been able to review this information or quality assure it for the purposes of the Draft Report, but intends to do so for the Final Report.

In response to stakeholder submissions, the Authority concluded in Volume 1 that SunWater's proposal to unbundle opening ARR balances using 24 years of forecast renewals expenditure, combined with the present value of actual expenditure data available for 2006-11 is defensible. The Authority notes that actual 2000-06 renewals expenditure data is not available.

The Authority has also recommended an enhanced consultative role as also outlined below.

4.3 Past Renewals Expenditure

As noted in Volume 1, the Authority has reviewed the prudency and efficiency of selected renewals expenditures over the 2006-11 price paths. The Authority has also sought to compare the original expenditure forecasts underlying the 2006-11 price paths with actual expenditure, to establish the accuracy of SunWater's forecasts.

Submissions

SunWater

SunWater (2011) submitted actual renewals expenditure for the Lower Mary Distribution System for 2006-11 (Table 4.1). This expenditure included indirect and overhead costs which are subject to a separate review by the Authority (see Chapter 5 – Operating Costs). SunWater advised that it was unable to provide the forecast renewals expenditure (approved for the 2005-06 review) for this period.

These estimates reflect SunWater's most recent information (including that received by the Authority in September 2011 relating to renewals expenditure) and differ from SunWater's NSP.

Table 4.1: Past (Actual) Renewals Expenditure 2006-11 (Real $'000)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*
Past (Actual) Renewals Expenditure	69	119	175	178	223

Note: The estimates reflect the most recent information provided by SunWater to the Authority in September 2011.
Source: SunWater (2011an).

Other Stakeholders

During the first round of consultation (May 2010), irrigators submitted that some assets are inefficient and were designed to deliver a far greater level of service than was ever required.

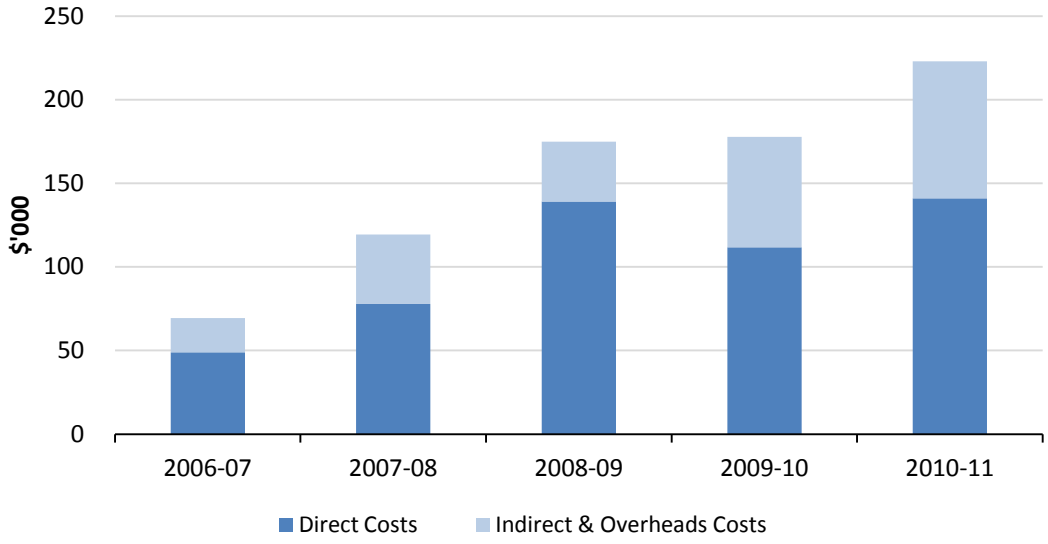
During the second round of stakeholder consultations (April 2011), irrigators noted that the scheme is overdesigned but the NSP has not explained how such overdesign is treated in the price review.

Authority's Analysis

Total Renewals Expenditure

The total renewals expenditure over 2006-11 is detailed in Figure 4.1 below. Indirect and overhead costs are addressed in a following chapter.

Figure 4.1: Past (Actual) Renewals Expenditure 2006-11 (Real $'000)



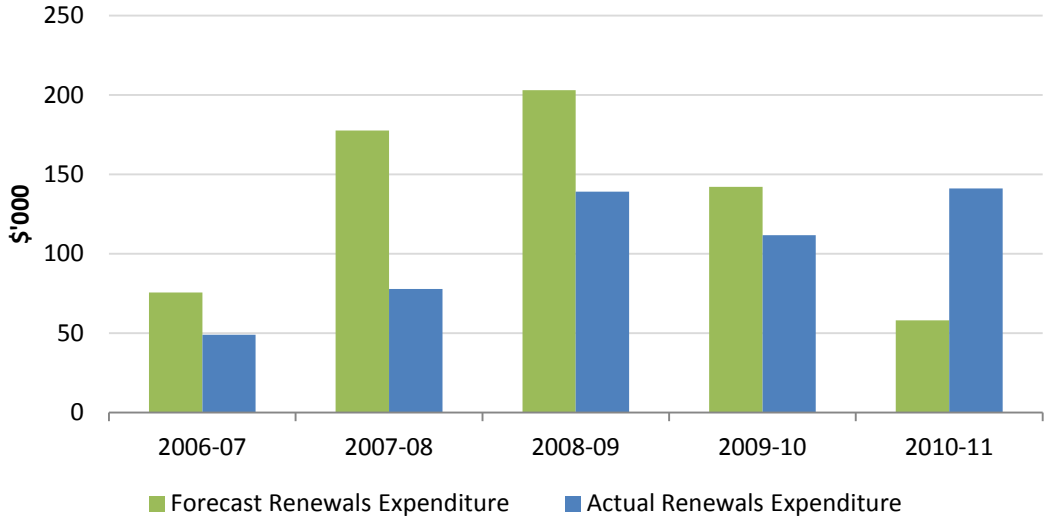
Note: The estimates reflect the most recent information provided by SunWater to the Authority in September 2011.
Source: SunWater (2011an).

Comparison of Forecast and Actual Costs

The Authority was able to source forecast direct renewals expenditure from Indec, who undertook the analysis for the 2005-06 review.

A comparison of forecast and actual direct renewals expenditure in the Lower Mary Distribution System for 2006-11 is shown in Figure 4.2.

Figure 4.2: Direct Renewals Expenditure 2006-11 (Real $'000)



Note: The estimates reflect the most recent information provided by SunWater to the Authority in September 2011.
Source: Forecast Indec (2011), Actual SunWater (2011k)

Actual renewals expenditure was $138,000 (direct costs) lower than forecast over the 2006-11 period.

Aurecon was appointed to review the efficiency (and prudency where not previously approved) of past renewals expenditures. SKM was subsequently commissioned by the Authority to conduct further analysis of one past renewals item.

Aurecon's Review

In the absence of forecast renewals expenditure for 2006-11 from SunWater (as noted above), Aurecon sought to identify variances between annually budgeted (Board approved) and actual expenditure for certain projects. Aurecon noted a number of limitations in the general past renewals information provided by SunWater including:

(a) no indication of the Board approved budget for all projects in 2006-07;

(b) totals include indirect and overhead costs, and any proposed changes in allocation methods by the Authority will impact renewal activity costs;

(c) many projects run over several financial years, in which the Board approved budget only appeared in the first year, and not subsequently. Further there was difficulty linking activities across years, due to the nature of the database provided; and

(d) the summation of annual totals within the database did not equate with stated renewals expenditure in the NSP[4].

Following its field inspection of assets at the Walker Point Network and Copenhagen Bend Network, Aurecon made a general observation that in many instances the facilities appeared overdesigned compared to modern standards and were attracting additional maintenance and operating costs because of it.

[4] Aurecon stated that this discrepancy could be due to significant amount of renewal projects being below $10,000 in value as it requested expenditure items valued at only $10,000 and above. Despite Aurecon's request, the Authority notes that the database provided by SunWater includes some projects below $10,000 but does not equate to the figures submitted in the NSP.

In response to stakeholder submissions, the Authority notes that any overdesign of existing facilities would normally result in an adjustment to the existing regulatory asset base. However, under the Ministerial Direction, the Authority is not to consider the existing asset base for this review. [The Authority has sought to identify any overdesign of forecast renewals expenditure in its prudency and efficiency review – see further below.]

In addition to recommendations on the general level of past renewals information, Aurecon assessed the prudency and efficiency of a selected past renewals item. Aurecon's analysis was on the basis of total costs including indirect costs and overheads.

Item 1: Investigate Seepage at Walker Point Balancing Storage (including indirect and overhead costs)

SunWater

This item of renewals expenditure was undertaken in 2009-10 at a cost of $41,031 (below the budgeted cost of $104,302). Its purpose was to investigate the seepage at Walker Point Balancing Storage.

Aurecon's Review

Aurecon noted that the Walker Point balancing storage was a 32 ML above ground holding dam experiencing leakage along the south-eastern walls.

Aurecon noted that significant expenditure has been assigned in relation to the leakage at this balancing storage. At the site visit undertaken by Aurecon, the seepage at the site was clearly visible, validating the need for response.

Aurecon did not conclude on the prudency and efficiency of this past renewals expenditure item.

Authority's Analysis

The Authority notes that Aurecon did not specifically conclude on the prudency and efficiency of this particular item of past renewals expenditure.

However, Aurecon's site visit indicated there was a need for response to the problem of seepage. Further, the Authority notes that this item relates to the investigation of seepage and final remediation works, which is broadly consistent with good asset management practice and general stakeholder views for SunWater to verify and validate renewals expenditure.

Therefore, the Authority is therefore inclined to conclude that this item, relating to the investigation of seepage and final remediation works, is prudent and efficient.

[The Authority notes that Aurecon did question the proposed course of works for 2011-12 arising from this investigation, and this expenditure is separately reviewed further below in future renewals.]

Item 2: Electrical Component Upgrade of the Owanyilla Pump Station (including indirect and overhead costs)

SunWater

This item was undertaken in 2010-11 at a cost of $404,000.

SKM's Review

SKM reviewed the total cost for this renewals item, based on SunWater's Systems, Applications and Products (SAP) Works Management System (WMS) which identified a cost of $404,000 for the relevant elements of the capital expenditure.

(a) Available Information

SKM reviewed SunWater's SAP-WMS, and asset condition and risk assessment policy and procedures.

Table 4.2: Documentation Reviewed Specific to the Owanyilla Pump Station Electrical Component Upgrade

Document No.	*Document Name*	*Document Title*	*Date*
1108434	1107255 QCA Justification - Owanyilla Pump Station - Electrical Component Upgrade	Owanyille PSTN – QCA Justification: Owanyilla Pump Station: Electrical Component Upgrade	8th August 2011

Source: SKM (2011).

(b) Prudency Review

SunWater's Whole of Life Maintenance Planning Tool (WLMPT) allocates a standard run to failure asset life of 20 years and a maximum condition assessment frequency of every of two years. However, SKM noted that in SunWater's WMS the standard run to failure asset life for this asset is specified as 15 years. SKM questioned the discrepancy between the standard run to failure asset life for this asset specified in the WLMPT and that captured in SAP. SKM noted that given the operation date of this asset, the discrepancy has no impact on the value of the renewals item associated with the component upgrade although it may impact the value of the renewals item associated with future replacements.

SKM considered a run to failure asset life of 20 years for this asset type to be at the upper end of what may be considered reasonable, considering good industry practice. SKM also considered a condition assessment frequency of two years for electrical control system infrastructure to be appropriate.

Based on the WMS record, SKM confirmed that this asset has been in service since 1986-87.

During the most recent risk assessment (2007), SunWater applied its risk evaluation method to this asset and determined that it has a production/operations risk criterion consequence rating of moderate (score 18). Together with a probability (likelihood of occurrence) score of 45, this resulted in an overall risk score of 818 which places this asset in a 'high' risk category.

For this asset type, an overall risk category of 'high' reduced the run to failure asset life from 20 years to 13 years in accordance with SunWater's method. The reasons for such a reduction are that the standard asset run to failure life is only a medium value and actual run to failure life for a particular asset may be higher or lower than this, the spread being typically in the form of a normal distribution. As such for high risk assets where it is preferable to schedule replacement before run to failure, the run to failure asset life is reduced from the standard. SKM considered SunWater's approach to conform to good industry practice and find that the reduction in run to failure asset life for this particular asset from 20 to 13 years to be reasonable.

However, SKM noted that in an earlier risk assessment conducted in 2005, the overall risk rating was determined as being 'low', with the risk consequence applied to

production/operations and stakeholder relations being 'minor' (score 8) and 'insignificant' (score 3) respectively and with the likelihood score being 3. The combination of the worst case consequence score and likelihood score resulted in an overall worst case risk assessment score of 24 (category 'low'). Under SunWater's systems, such a score dictates no adjustment to the standard run to failure.

SKM questioned why the worst case consequence risk rating was changed from 'minor' to 'moderate', and what the reason is for the change in likelihood (probability) score from 3 to 45.

SunWater advised that the electrical control gear has proven to be very reliable up until 2007 with very few faults experienced. However, in recent years there have been an increasing number of faults and breakdowns recorded against the asset and these are becoming difficult to rectify as some parts are no longer available or supported.

SKM found that for this asset, there were four condition assessments recorded in WMS. All of the assessments determine the worst case condition criterion as being availability of spare parts which has progressed from a score of 3 (in 2006-07) to 5 (in 2006-07). Under SunWater's condition assessment procedures, asset condition is rated from 1 to 6, 1 being as new and 6 being unserviceable.

Despite the above mentioned differences in standard run to failure asset life and the sudden transition in risk rating (which occurred before the noted increase in failure rate), given that the asset was installed in 1987, it is now operating beyond its standard, run to failure asset life (whether based on 15 years or 13 years or 20 years). As such, SKM considered that scheduling a replacement or, in this case, a major refurbishment in 2010-11 is reasonable.

SKM indicated that it that has not sighted any option evaluation for this renewals item. However SKM noted that, from the run to failure asset life for this asset, the asset is overdue for replacement. As such the proposed refurbishment of the asset (rather than renewal) is assumed to have resulted from evaluation of the benefits of selective component upgrade over renewal.

SKM viewed selective component upgrade as more cost-effective than renewal, provided that the upgrade will provide a similar run to failure asset life as would a new asset. For this asset, the upgrade is planned by SunWater to provide a further 13 years of life (the risk adjusted run to failure asset life of the asset). As such SKM considered the upgrade option more prudent than replacement.

SKM drew this conclusion on the understanding, from discussion with SunWater staff, that appropriate replacement/alternative component parts can be sourced for this refurbishment to give an equivalent in service life of the asset to that of a complete asset renewal/replacement. As such, SKM noted that the efficacy of the replacement program is dependent upon the selection of the components to be replaced given that a full replacement is not envisaged.

On the understanding that SunWater's policies for adjusting refurbishment periods and assessing asset condition have been followed, SKM concluded that the need and timing for refurbishment (in the form of component replacement) of this renewals asset has been demonstrated. As such, SKM concluded that the inclusion of this renewals item in the renewals expenditure value is prudent.

(c) Efficiency Evaluation

SunWater advised that for projects of a moderate to significant size, it would typically conduct an options study and undertake a zero-based costing, SKM noted that it has not sighted an options study or a detailed bottom up costing for this renewals item. Therefore, SKM relied on the information provided in the WMS.

SKM noted that the value of this renewal item submitted by SunWater to the Authority is $404,022 while SunWater's standard determination of replacement cost for this item (to be replaced five years or more post the planning date) is some $1.172 million.

SKM estimated the cost of a modern equivalent asset for this renewals item based on the bill of materials (BoM) contained in SunWater's WMS. SKM compared the replacement cost of several high cost sub-items with their cost in 1996-97 and established an average price multiplier of approximately 1.45.

SKM applied this multiplier to the 1996-97 costs ($550,150) to obtain an estimated replacement cost for materials and a conservative 50% uplift for installation to obtain an estimated complete replacement cost of $1.18 million. This compares favourably with the $1.17 million replacement cost captured in SunWater's SAP-WMS.

Based on this estimated cost of a modern equivalent asset and given that the additional extended life of the asset is projected to be equivalent to a new replacement asset, SKM considered the proposed renewals expenditure of $404,022 to be efficient.

Authority's Analysis

The Authority accepts SKM's recommendation that the past renewals expenditure on the replacement of upgrade of electrical components at Owanyilla Pump Station is prudent and efficient.

Conclusion

In summary, two items for the Lower Mary River Distribution System were sampled. On the basis of the consultants review and the Authority's analysis, the Authority considers that these items are prudent and efficient and have been retained as past expenditure.

Further, as noted in Volume 1, after a consideration of all its consultants' reviews, the Authority has recommended that a 10% saving be applied to all non-sampled and sampled items for which there was insufficient information.

In total, the Authority recommends the expenditure be adjusted as shown in Table 4.3.

Table 4.3: Review of Selected Past Renewals Expenditure 2006-11 ($'000)

Item	*Date*	*SunWater*	*Authority's Findings*	*Recommended*
Sampled Items				
Investigate Seepage at Walker Point Balancing Storage	2009-10	41	Prudent and efficient	41
Electrical Component Upgrade of the Owanyilla Pump Station	2010-11	404	Prudent and efficient	404
Non-Sampled Items				10% savings applied

Source: SunWater (2011), Aurecon (2011), SKM (201) and QCA (2011).

4.4 Opening ARR Balance (at 1 July 2012)

Submissions

SunWater

SunWater indicated that the renewals opening ARR balance for 1 July 2011 was negative $1,298,000 for the Lower Mary River Distribution System. This estimate reflects the most recent information provided by SunWater to the Authority in September 2011 and may differ from the NSP.

Other Stakeholders

MSF (2010) submitted that there should not be a large negative renewals balance carried forward and believed it should be set to zero due to Aurecon's inability to validate the balance and the absence of consultation with irrigator stakeholders in relation to planning and expenditure.

MSF noted that if the renewals balances for Lower Mary (bulk and distribution system) are not set to zero, there will be a large impact on water pricing, as explained in Aurecon's report.

MSF submitted that the current negative balance for the Lower Mary Distribution System should be scrutinised and the opening ARR at 2006-07 be verified. MSF further stated that the distribution system's $1.4 million negative balance – if not reduced to zero – could become $2.7 million for the system, potentially providing a large impact on water pricing.

CANEGROWERS (2011a) expressed concerns about long term scheme viability, stating that the negative ARR balance has a significant impact on price. CANEGROWERS noted that the renewals annuity is $545,000 compared to a spend of only $198,000, with renewals consisting of 41% of all distribution system costs.

Authority's Analysis

Based on the Authority's assessment of the prudency and efficiency of past renewals expenditure, and the proposed methodology for unbundling ARR balances, the recommended opening ARR balance for 1 July 2011 for Lower Mary River Distribution System is negative $1,290,000.

The Authority calculated the opening ARR balance at 1 July 2011:

(a) adopting the opening balance as at 1 July 2006;

(b) adding 2006-11 renewals annuity revenue;

(c) subtracting 2006-11 renewals expenditure; and

(d) adjusting interest over the period consistent with the Authority's recommendations detailed in Volume 1.

To establish the closing ARR balance as at 30 June 2012 of negative $1,178,000, the Authority:

(a) added forecast 2011-12 renewals annuity revenue;

(b) subtracted forecast 2011-12 renewals expenditure; and

(c) adjusted for interest over the year.

The closing ARR balance for 30 June 2012 is the opening ARR balance for 1 July 2012.

In response to MSF, the Authority has reviewed the past renewals expenditure that form part of the opening ARR balance for prudency and efficiency. As required by the Ministerial Direction, past prudent and efficient renewals expenditure are included in prices. The impact on prices is established in a subsequent chapter.

Further, the Authority has not set negative ARR balances to zero, as to do so may result in insufficient funds for future expenditure required for service delivery. Instead, the Authority has reviewed renewals expenditure and operating costs as outlined further below and in the subsequent chapter.

4.5 Forecast Renewals Expenditure

Planning Methodology

The Authority has reviewed SunWater's Asset Management Planning Methodology in Volume 1 and recommended improvements to their current approach, including:

(a) high-level options analysis for all material renewals expenditures expected to occur over the Authority's recommended planning period (20 years), with a material renewals expenditure being defined as one which accounts for 10% or more in present value terms of total forecast renewals expenditure; and

(b) detailed options analysis (which also take into account trade-offs and impacts on operational expenditures) for all material renewals expenditures expected to occur within the first five years of each planning period.

Prudency and Efficiency of Forecast Renewals Expenditure

Submissions

SunWater

SunWater's proposed renewals expenditure for the Lower Mary River Distribution System is presented in Table 4.4 as provided in its NSP (submitted prior to the Government's announced interim prices for 2011-12).

Table 4.4: Forecast Renewals Expenditures 2011-16 ($'000)

Facility	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*
Copenhagen Bend Pump Station	11	112	227	-	11
Main Roads Distribution	-	-	-	8	-
Main Roads Pump Station	-	-	32	37	-
Owanyilla Diversion Channel Distribution	-	-	-	11	11
Owanyilla Pump Station	93	-	-	-	-
Walker Point Distribution	109	-	-	-	-
Walker Point Pump Station	55	56	170	40	6
Total	**268**	**168**	**430**	**96**	**29**

Source: SunWater (2011).

The major items incorporated in the above estimates are:

(a) an electrical component upgrade of the Copenhagen Bend Pump Station costing $227,000 in 2013-14. The electrical components of the pump station will be upgraded due to the age of the components and the unavailability of spares;

(b) refurbishment of the pump and motor at Copenhagen Bend Pump Station costing $112,000 in 2012-13. Due to their condition, the pump and motor require refurbishment. This will be completed over two years;

(c) refurbishment of the Balancing Storage in the Walker Point distribution network costing $109,000 in 2011-12. Due to its condition, this balancing storage requires relining to provide an effective seal. The project commenced in the 2010-11 financial year; and

(d) an electrical component upgrade at Walker Point Pump Station costing $170,000 in 2013-14. The electrical components of the pump station will be upgraded due to the age of the components and the unavailability of spares.

The major renewals expenditure items from 2016-36 include:

(a) replacement of the major electrical components and cabling at Walker Point Pump Station costing $1,198,000 in 2022-23;

(b) replacement of the high voltage switchboard at Owanyilla Pump Station costing $950,000 in 2024-25; and

(c) refurbishment of the gate, pipework and scour outlet and replace air valves and vents along the pipelines (throughout the system) costing $905,000 in 2027-28.

SunWater's forecast renewal expenditure items greater than $10,000 in value, for the years 2011-12 to 2035-36 in 2010-11 dollar terms are provided in **Appendix A**.

Other Stakeholders

Irrigators at the second round of stakeholder consultations commented that SunWater's renewal expenditures are not detailed enough to for irrigators to properly understand the nature of these costs.

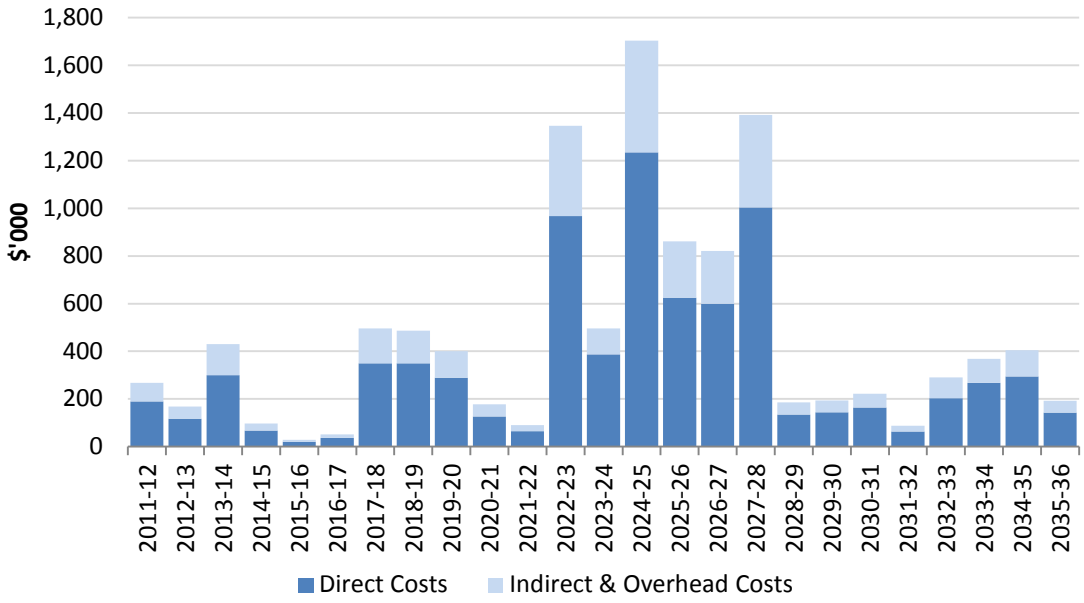
CANEGROWERS (2011a) commented that replacement of all items should be deferred as long as possible since it is not prudent to replace many assets in the scheme, and that items such as switchboard replacement, old parts of switch boards replaced prudently in other regions could be used to keep the switchboard in Maryborough going for many decades.

Authority's Analysis

Total Costs

SunWater's proposed renewals expenditure for 2011-36 for the Lower Mary River Distribution System is shown in Figure 4.3. This reflects the most recent renewals information provided by SunWater to the Authority in September 2011, and differs from the NSP. The Authority has identified the direct cost component of this expenditure, which is reviewed below. The indirect and overheads component of expenditure relating to these projects reviewed in Chapter 5 – Operating Costs.

Figure 4.3: Forecast Renewals Expenditure 2011-36 (Real $'000)



Source: SunWater (2011am).

Item Review

Aurecon reviewed the prudency and efficiency of a sample of forecast renewals expenditure items. The Authority subsequently referred one item to SKM for review. Aurecon and SKM assessed the efficiency of the total costs of renewals items, that is, including indirect and overhead costs.

Item 1: Refurbishment of Walker Point Balancing Storage (including indirect and overhead costs)

SunWater

This renewals item is for the installation of drains and culvert head works and notch weir at Walker Point Balancing Storage and is forecast to cost $109,000 in 2011-12.[5]

Consultant's Review

Aurecon noted that significant expenditure has been assigned in relation to the leakage at this balancing storage. It is understood that the proposed work would not remediate the leak. Rather, it is intended to mitigate risk through controlling the run-off and channelling the seepage and would provide a control for measuring water loss.

Aurecon was not provided with the investigative report into the seepage that would have examined options along with their associated costs to repair the seepage. Aurecon considers this report a critical document in substantiating the proposed course of action adopted by SunWater.

Aurecon noted that the engineering plan for the drain works provided by SunWater did not have specific details in relation to the scope of work proposed or budget for the culvert works. Aurecon also noted that substantial indirect and overheads are incorporated within the proposed expenditure of $109,000.

A site visit undertaken by Aurecon confirmed the need for a response to the seepage. However, Aurecon questioned the proposed course of works and the significant cost associated with it. Adopting SunWater's interest rate of 9.689% to the proposed expenditure of $109,000 implies an annual interest cost of $10,561. Assuming an average of 3,000ML per annum utilisation of the balancing storage implies an annual interest cost of $3.50 per ML. Aurecon noted that even with this expenditure, the leak is not mitigated – the investment is only to control and measure the run-off. Aurecon considered that an additional capital investment is still required to repair the seepage as the proposed work would not remediate the seepage.

Based on the financial cost alone, Aurecon did not view the proposed expenditure as efficient.

Authority's Analysis

The Authority accepts Aurecon's conclusion that the proposed expenditure is not efficient noting that Aurecon was not provided with a critical document in substantiating the proposed course of action adopted by SunWater.

As a result, the Authority considers that SunWater has not substantiated the prudency of the refurbishment of the Water Point Balancing Storage and has removed all expenditure from its recommended tariffs.

Item 2: Replacement of Electrical Control System at Walker Point Pump Station (including indirect and overhead costs)

SunWater

There is a significant investment proposed for Walker Point Pump Station, relating to the replacement of the Electrical Control system as follows:

[5] The Authority notes that past expenditure of $41,031 in 2009-10 to investigate seepage and develop final remediation design for this item has been reviewed as part of past renewals expenditure.

(a) electrical component upgrade to assess, design and replace Programmable Logic Controller (PLC), switch boards and cables for an expected cost of $55,000 in 2011-12;

(b) electrical component upgrade relating to documentation, drawings, specifications and cost estimate for PLC, switch boards and cables for an expected costs of $56,000 in 2012-13.

(c) electrical component upgrade to supply, install, commission PLC, switch boards and cables) for an expected cost of $170,000 in 2013-14.

Other Stakeholders

No other stakeholders have commented on this item.

Consultant's Review

Aurecon noted that the proposed expenditure aligns with a number of similar other proposals across other pump stations both within the Lower Mary and at Bundaberg. Aurecon also noted that the electrical control panels are original but somewhat dated, causing issues for the replacement or parts as required, as some parts were not obtainable from the market.

Aurecon noted the Parsons Brinkerhoff (PB) report *Audit of Electrical Sites* (2009) recommended the replacement of these electrical control panels across pump house facilities across the state. However, it did not identify the Walker Point Pump Station as a high priority for replacement in the short term.

Aurecon noted that in recent years, SunWater adopted a three-year job process which involved an internal assessment of the works program followed by detailed design works and specification in the second year typically undertaken by SunWater, including the preparation of the works program for tendering.

Aurecon noted that adopting SunWater's interest rate of 9.689% to the total proposed expenditure of $281,000 for these items implies an annual interest cost alone of $27,226, or $9.00 per ML per annum assuming an average of 3,000ML water pumped via the pump station.

Aurecon noted that:

(a) SunWater employed a structured process for the replacement of a significant asset, supported to a large degree by the external expert report by PB's report. A number of other major pump station locations are also proposed for similar renewal expenditure;

(b) actual works to be undertaken by specialized external electrical contractors;

(c) costs incurred for stages 1 and 2 (2011-12 and 2012-13) are predominantly incurred by SunWater staff; and

(d) the proposed upgrading will allow external monitoring and remote control of the pump house facilities, improving labour and cost efficiencies. However, the interest cost arising from the works is also high, and Aurecon have not seen if any financial analysis has been undertaken evaluating this cost.

Aurecon recommended that SunWater re-examine the proposed renewal works at this site, and undertake additional financial analysis. Aurecon noted that it may be possible to extend the working life of the existing electrical control panel at Walker Point Pump Station by utilising parts of assets which will be retired from the Bundaberg scheme before a full replacement is required at some stage.

While Aurecon did not provide a conclusion about prudency and efficiency, it recommended that the proposed works for 2011-14 be postponed until an evaluation is undertaken examining the feasibility of using parts from Bundaberg.

Authority's Analysis

The Authority accepts Aurecon's recommendation and therefore concludes that this renewals expenditure be excluded from prices until an evaluation is undertaken examining the feasibility of using parts from Bundaberg.

Item 3: Electrical Component Upgrade at Copenhagen Bend Pump Station (including indirect and overhead costs)

SunWater

This renewals expenditure relates to:

(a) the documentation, development of drawings, specifications and cost estimate of electrical component upgrade at Copenhagen Bend Pump Station and is forecast to cost $113,000 in 2012-13; and

(b) the supply, installation and commissioning of electrical component upgrade at Copenhagen Bend Pump Station and is forecast to cost $170,000 in 2013-14.

Other Stakeholders

During Aurecon's site visit, it noted that irrigators present at the site visit expressed concern regarding the cost of the proposed investment for the Copenhagen Bend Pump Station, considering that usage at this distribution network is extremely low.

In a written submission, MSF (2011) queried whether SunWater will account for not replacing current assets and conduct an analysis of service is required, citing an example in the renewals forecast for distribution in 2012-13 where $112,000 is allocated for Copenhagen Bend Pump and Motor, and a further $227,000 for Copenhagen Bend electrical in 2013-14.

MSF commented that there are two pumps for Copenhagen Bend and that their historical usage would not warrant replacement or upgrade for these pumps. MSF suggests that these two pumps could be placed on roster for water use. A refurbishment of the pump, instead of replacement has been deemed more appropriate. MSF further questioned whether the capacity of two submersible pumps in the Copenhagen Bend Pump station has been compared with historical usage data when SunWater conducted an asset management.

Consultant's Review

Aurecon noted that the proposed expenditure aligns with a number of similar other proposals across other pump stations both within the Lower Mary and at Bundaberg. SunWater indicated that many replacement parts were not obtainable from the market.

Aurecon noted the PB report *Audit of Electrical Sites* (2009) recommended the replacement of these electrical control panels across pump house facilities across the state. Aurecon noted the increasing frequency of breakdowns and repairs required in recent years at a pump station located at Bundaberg with a similar electrical panel structure (projected for replacement in 2012-13).

Aurecon noted that the SunWater regional manager remarked that it was highly unlikely that the proposed expenditure would eventuate in 2013-14, and that parts recovered from the removal of

similar electrical control panels at other locations, that is Bundaberg, would be retained for use at this location, extending the possible working life of the existing facilities for a number of years.

Aurecon noted that adopting SunWater's interest rate of 9.689% to the total proposed expenditure of $283,000 (item 5 and 6) implies an annual interest cost alone of $27,420, or $9.00 per ML per annum assuming an average of 3,000ML water pumped via the pump station. If the actual water pumped is only 1,500ML per annum, then the implied interest cost alone is $18 per ML per annum.

Aurecon noted that:

(a) the pump house and associated assets were installed many years ago, and now operate at a fraction of its capacity. In essence, irrigators have over-capitalised assets which are incurring significant maintenance costs, and in many cases are coming to their end of effective life (likely to incur increased risks and breakdowns going forward);

(b) there is an increased risk with the maintenance of the outdated electrical control system, but the cost of replacement may clearly outweigh the potential financial benefit to all stakeholders;

(c) in such circumstances involving significant costs and increased operational risks, engagement with irrigators may be beneficial as to the optimal works program (i.e. refurbishments vs. replacement); and

(d) although extensive financial modelling and analysis is undertaken by SunWater to determine the least cost strategy for managing the asset over the whole of asset life, there is a need to also incorporate into the decision making an evaluation process that examines the economic and/or financial merits of such expenditures from a product delivery/customer (water value) prospective.

Aurecon recommended that SunWater re-examine the proposed renewal works at this site, and undertake additional financial analysis. Aurecon noted that it may be possible to extend the working life of the existing electrical control panel at Walker Point Pump Station by utilising parts of assets which will be retired from the Bundaberg scheme before a full replacement is required at some stage.

In view of this, Aurecon recommended that the proposed works for 2012-14 be postponed until an evaluation is undertaken examining the feasibility of using parts from Bundaberg.

Authority's Analysis

The Authority accepts Aurecon's recommendation and therefore concludes that this renewals expenditure be excluded from prices until an evaluation is undertaken examining the feasibility of using parts from Bundaberg.

Conclusion

In summary, three items for the Lower Mary River Distribution System were sampled, all of which were found to be not prudent and therefore removed from proposed renewals expenditure.

Further, as noted in Volume 1, after a consideration of all its consultants' reviews, the Authority has recommended that a 10% saving be applied to all non-sampled and sampled items for which there was insufficient information.

In total, the Authority recommends that the proposed works be adjusted as set out in Table 4.5.

Table 4.5: Review of Forecast Renewals Expenditure 2011-36 ($'000)

Item	*Year*	*SunWater ($000)*	*Authority's Findings*	*Recommended ($000)*
Sampled Items				
1. Refurbishment of Walker Point Balancing Storage	2011-12	109	Not prudent	0
2. Electrical Component Upgrade at Walker Point Pump Station	2012-13 to 2013-14	226	Excluded pending feasibility study	0
3. Electrical Component Upgrade at Copenhagen Bend Pump Station	2012-13 to 2013-14	283	Excluded pending feasibility study	0
Non-Sampled Items				10% saving applied

Source: SunWater (2011), Aurecon (2011) and QCA (2011).

4.6 SunWater's Consultation with Customers

Submissions

SunWater

SunWater (2011b) submitted that through Irrigator Advisory Committees (IACs), customers are:

(a) able to offer suggestions on planned asset maintenance which are considered by SunWater in the context of asset management planning;

(b) consulted on various operational and other aspects of service provision, including the timing of shutdowns and managing supply interruptions; and

(c) provided with information about renewals expenditure, particularly where supply interruptions may result.

Nonetheless, SunWater noted opportunities for greater consultation with irrigators do exist.

Other Stakeholders

MSF (2011) reiterated the importance of SunWater's asset management plan to include consultation with irrigators with respect to the renewals expenditure. MSF expressed concern that they have not seen an asset management plan for the last five years.

Authority's Analysis

In Volume 1, the Authority noted customers' concerns about the lack of involvement in the planning of future renewals expenditure has been raised by irrigators and their representatives.

The Authority recommends 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. SunWater should also be required to submit the service standards and renewals expenditure program to irrigators for comment whenever they are amended and that irrigators' comments be documented and published on SunWater's website and provided to the Authority.

In response to MSF's (2011) submission, the Authority notes that the timing of annual reports and reviews of SunWater's Strategic Asset Management Plans are determined by DERM.

4.7 Allocation of Distribution Renewals Costs According to WAE Priority

Previous Review

For the 2006-11 price path, the renewals costs for the Lower Mary River distribution infrastructure were apportioned between priority groups using converted nominal water allocations. The conversion to medium priority WAE was determined by a water pricing conversion factor (2.3:1), that is, one ML of high priority WAE was considered equivalent to 2.3 ML of medium priority WAE.

Stakeholder Submissions

SunWater

SunWater (2011i) submitted that the allocation of the renewals annuity is a matter for tariff setting by the Authority, but that the HUF methodology should not be used because the HUF is not relevant to the allocation of fixed renewals costs in distribution systems which do not provide storage.

In determining a basis for allocating fixed distribution system costs to customers in general (rather than specifically between customer priority groups), SunWater submitted that current WAEs should be adopted. SunWater stated that current WAEs represent the best available means of determining customers' current share of distribution system capacity.

Other Stakeholders

CANEGROWERS (2011a) submitted that there is a need for conversion factors applicable to both operational and renewals costs to ensure that if Medium Priority WAEs are converted to High Priority there is not an extra cost to remaining Medium Priority customers.

CANEGROWERS noted that if SunWater's claim that all costs besides electricity costs are fixed, then this justifies the use of the same conversion factor for both operational and renewals costs.

CANEGROWERS submitted that a trading conversion factor for channel systems could be used for renewals and operational costs.

Authority's Analysis

As noted in Volume 1, the Authority considers that distribution system costs should be allocated according to the relevant cost drivers. The Authority does not consider the HUF methodology to be an appropriate cost driver for distribution system costs.

In principle, the Authority considers that distribution system capacity is the relevant cost driver for fixed renewals expenditure. In general, the best measure of capacity share is the instantaneous or peak flow rate. However, neither DERM's regulatory framework nor SunWater's contracts currently specify a peak flow rate or share of system capacity.

As discussed in Volume 1, the Authority recommends that nominal WAEs be used for the allocation of fixed distribution system costs between priority groups. That is, on the basis of current WAEs held, irrespective of priority type, with no conversion. Under this approach, high and medium priority WAEs are allocated the same costs per ML. This reflects the view that medium and high priority users have the same share of distribution system capacity per ML of nominal WAE, as recognised by some customers (including the Central Highland Cotton Growers and Irrigators Association) and as submitted by SunWater.

The Authority also recommends that, at the conclusion of this review, SunWater commence a review of a more appropriate means for allocating fixed renewals costs in distribution systems.

In the Lower Mary Distribution System, the only high priority WAE is held by SunWater for distribution losses. High priority distribution loss WAE is required to fill the distribution system at the commencement of each irrigation season to allow the delivery of medium priority water. As there are no high priority customer WAEs in the distribution system, the high priority distribution loss WAEs are used exclusively to benefit medium priority distribution system customers. Therefore, the costs of storing high priority distribution loss WAE must be borne by medium priority customers.

The bulk storage costs associated with distribution loss WAEs are then transferred to the distribution system and included in distribution prices. Under the Authority's recommended approach (as outlined in Volume 1, this report and the Lower Mary WSS Draft Report) the cost of distribution loss WAEs is calculated by allocating bulk costs using the HUF.

In response to CANEGROWERS, if there is a material level of conversions between medium priority and high priority, the Authority will consider any necessary price adjustments during the next price review. The appropriate allocation method for operational expenditure is discussed in a subsequent chapter.

4.8 Calculating the Renewals Annuity

In Volume 1, the Authority recommends an indexed rolling annuity, calculated for each year of the 2012-17 regulatory period.

For the Lower Mary River Distribution System the recommended renewals annuity for the 2012-17 regulatory period is shown in Table 4.6. The table shows the total renewals annuity recommended by the Authority and the component amounts for high and medium priority customers. Also presented for comparison is SunWater's total renewals annuity for 2006-11 and SunWater's proposed annuity for 2011-16. SunWater did not submit a disaggregation between high and medium priority customers.

Table 4.6: Lower Mary River Distribution System Renewals Annuity ($000)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Total SunWater	162	87	93	108	111	555	546	541	537	533	553
Total Authority							452	445	441	438	429
High Priority							0	0	0	0	0
Medium Priority							417	412	407	404	396

Note: Includes indirect and overhead costs relating to renewals expenditure, which is discussed in Chapter 5
Source: Actuals SunWater (2011) and Recommended (QCA 2011).

5. OPERATING COSTS

5.1 Background

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

Issues

To determine SunWater's allowable operating costs for 2012-17, the Authority considered the following:

(a) the scope of operating activities for this scheme;

(b) the extent to which previously anticipated cost savings (identified prior to the 2006-11 price paths) have been incorporated into SunWater's total cost estimates for the purpose of 2012-17 prices;

(c) the prudency and efficiency of SunWater's proposed operating expenditures including direct and non-direct costs and escalation factors; and

(d) the most appropriate methodologies for assigning operating costs to service contracts[6] and to different priority customer groups (within each service contract).

5.2 Total Operating Costs

Operating costs are generally classified by SunWater as either non-direct or direct.

Non-direct costs are classified as either:

(a) overhead costs – allocated to all of SunWater's 62 service contracts for services that support the whole business (for example, Board, CEO and human resource management costs); and

(b) indirect costs – allocated to more than one service contract (but not all service contracts) for specialised services pertaining to a particular type of asset or group of service contracts (for example, asset management strategy and systems).

Direct costs are those readily attributable to a service contract (for example, labour and materials employed directly to service a scheme asset) and have been classified as operations, preventive maintenance (PM), corrective maintenance (CM), electricity and other costs.

In its NSP, SunWater described the scope of its operating activities for this system to include service provision, compliance, insurance and other supporting activities (these were not classified by direct and indirect costs). SunWater noted that:

(a) a Service Manager and 41 staff are located at the Bundaberg office and are responsible for the day-to-day water supply management and for delivery of the programmed works for all users in the region. A senior operator is located in Maryborough;

(b) service provision relates to:

[6] SunWater refers to each bulk scheme and each distribution system as a service contract. Consequently, SunWater has 22 irrigation bulk service contracts and eight irrigation distribution system service contracts.

(i) water delivery – scheduling the diversion of bulk water into the distribution system, monitoring channel flows and operating regulating structures and quarterly meter reading. Distributing water requires ongoing monitoring of demand, channel flows and balancing storages by SunWater's operations staff to operate the system efficiently using a combination of manually and automatically operated regulating gates and pumps. The automatic sections of the distribution system still require operator intervention to ensure both proper operation and agreed customer service standards are being met; and

(ii) customer service and account management – managing enquiries about accounts and major transactions; providing up to date online data on WAE, water balances and water usage; and managing transactions such as temporary trades, transfers and other scheme specific transactions;

(c) compliance requirements to provide the bulk service include those relating to:

(i) the ROP for the Mary River Basin which will cover the Lower Mary WSS has been finalised in September 2011 by DERM. The IROL – a major part of which is gathering and reporting data at quarterly and annual intervals on water sharing rules, seasonal water assignments, circumstances where the requirements of the Licence were not met by the License details of any outcomes of the Licence which were taken in response to emergencies; water accounting and reporting on water use against water entitlement and managing distribution loss entitlement in accordance with the conditions under IROL and report to DERM on the diversions attributable to this entitlement;

(ii) environmental management to comply with the IROL and the *Environmental Protection Act 1994* which require SunWater to deal with a range of environmental risks such as fish deaths, chemical usage, pollution and contamination;

(iii) land management (weed and pest control, rates and land tax, security and trespass and access to land owned by SunWater);

(iv) workplace health and safety (WHS) to comply with the *Workplace Health and Safety Act 1995* (the WHS Act);

(v) financial reporting and taxation managed centrally through a finance group which also manages accounts payable for the business;

(vi) irrigation pricing that is subject to regulatory oversight by the Authority;

(vii) strategic asset management plan (SAMP) must be maintained under the *Water Supply (Safety and Reliability) Act 2008*;

(viii) system leakage and management plan (SLMP) under the *Water Supply (Safety and Reliability) Act 2008.* SunWater's SLMP for the Lower Mary distribution system, confirms that water is being lost in open storages and channels and that measures exist that could reduce these losses. However, the plan also indicates that water metering will need to be improved before these measures can be reliably evaluated. Currently, SunWater is developing a program to improve water metering to conform with the proposed Australian Standards for water metering.

(d) insurance is obtained on a portfolio basis and allocated to the scheme;

(e) other supporting activities include central procurement, human resources and legal services.

Previous Review

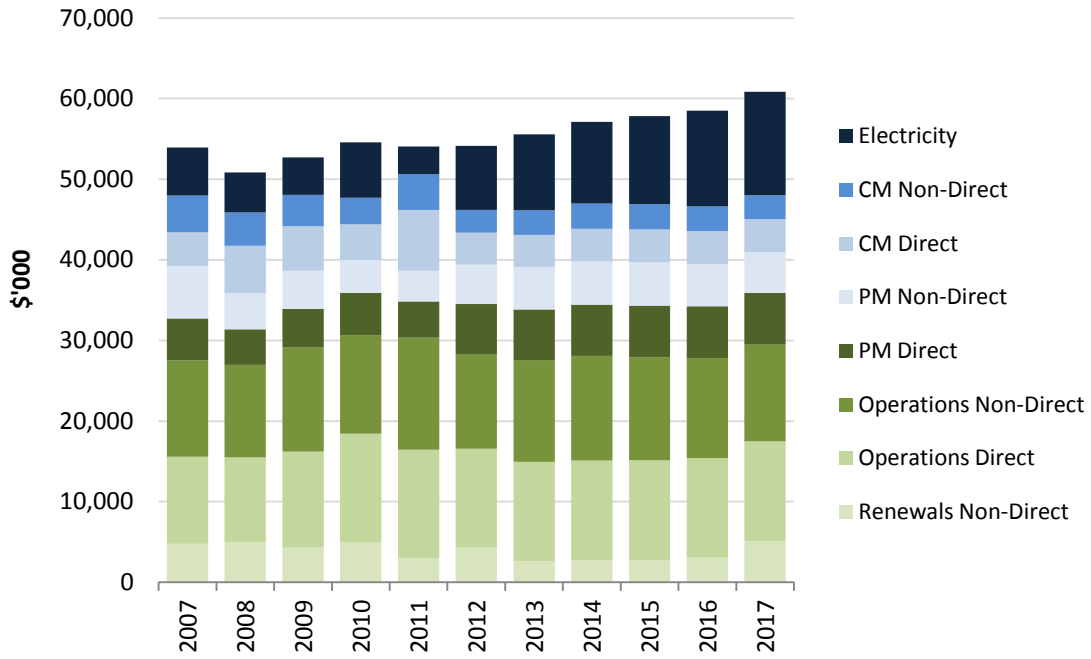
For the 2006-11 price paths, Indec identified annual cost savings of between $3.8 million and $5.5 million (2010-11 dollars) or 7.5% to 9.9% of total annual costs, which SunWater was to achieve during the 2006-11 price paths (SunWater, 2006a). See Volume 1.

Stakeholder Submissions

SunWater

SunWater's past and forecast total operating costs for its irrigation service contracts (all sectors) are summarised in Figure 5.1 below. SunWater's allocation of non-direct costs to activities (including renewals) is also identified. These estimates reflect SunWater's most recent information (including that received by the Authority in October 2011) and differ from SunWater's NSP as noted in Volume 1.

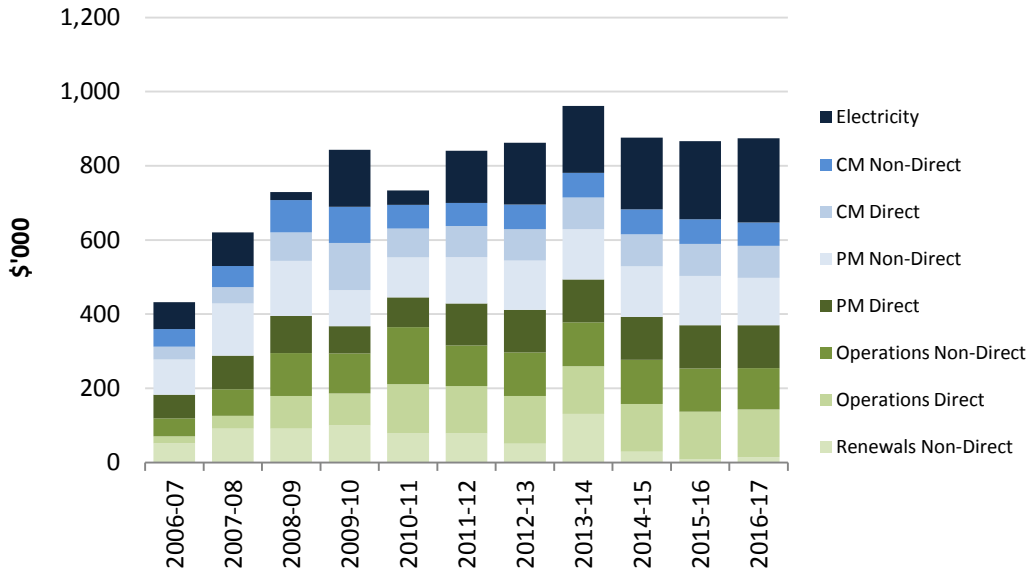
Figure 5.1: SunWater's Total Operating Costs (Real $'000) – All Service Contracts



Note: Renewals direct costs are discussed in the previous chapter. Renewals non-direct costs are the non-direct operating costs allocated to renewals. Totals vary from NSP due to the inclusion of renewals non-direct costs, SunWater's revised approach to insurance and electricity, exclusion of revenue offset (which is dealt with in the following chapter) and rounding. The estimates also reflect the most recent information provided by SunWater to the Authority in October 2011. Source: SunWater (2011ap) and SunWater (2011ao).

Expenditure by activity in Lower Mary Distribution System (all sectors) is shown in Figure 5.2, Table 5.1 and Table 5.2.

Figure 5.2: Total Operating costs – Lower Mary Distribution (Real $'000)



Note: Renewals direct costs are discussed in the previous chapter. Renewals non-direct costs are the non-direct operating costs allocated to renewals. Totals vary from NSP due to the inclusion of renewals non-direct costs, SunWater's revised approach to insurance and electricity, exclusion of revenue offset (which is dealt with in the following chapter) and rounding. The estimates also reflect the most recent information provided by SunWater to the Authority in October 2011. Source: SunWater (2011ap) and SunWater (2011ao).

Table 5.1: Expenditure by Activity (Real $'000)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations	68	107	204	195	286	237	245	247	248	245	240
Electricity	73	91	22	154	39	141	167	180	194	211	227
Preventive Maintenance	158	231	248	171	188	239	248	251	252	249	243
Corrective Maintenance	82	101	164	224	142	145	151	152	153	152	149
Renewals Non-Direct	51	91	91	100	78	79	51	131	29	9	15
Total	**432**	**620**	**730**	**843**	**734**	**840**	**862**	**961**	**876**	**866**	**874**

Note: Renewals direct costs are discussed in the previous chapter. Renewals non-direct costs are the non-direct operating costs allocated to renewals. Totals vary from NSP due to the inclusion of renewals non-direct costs, SunWater's revised approach to insurance and electricity, exclusion of revenue offset (which is dealt with in the following chapter) and rounding. The estimates also reflect the most recent information provided by SunWater to the Authority in October 2011. Source: SunWater (2011ap).

Table 5.2: Expenditure by Type (Real $'000)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Labour	78	106	158	184	170	202	205	205	205	205	205
Electricity	73	91	22	154	39	141	167	180	194	211	227
Contractors	5	8	47	34	33	15	15	15	15	16	16
Materials	24	37	49	58	38	54	55	56	57	58	58
Other	12	19	12	10	50	52	52	52	52	52	52
Non-Direct	241	360	441	403	403	376	367	452	353	325	316
Total	**432**	**620**	**730**	**843**	**734**	**840**	**862**	**961**	**876**	**866**	**874**

Note: Renewals direct costs are discussed in the previous chapter. Renewals non-direct costs are the non-direct operating costs allocated to renewals. Totals vary from NSP due to the inclusion of renewals non-direct costs, SunWater's revised approach to insurance and electricity, exclusion of revenue offset (which is dealt with in the following chapter) and rounding. The estimates also reflect the most recent information provided by SunWater to the Authority in October 2011. Source: SunWater (2011ap).

In its NSP, SunWater submitted that bulk water operating costs for this scheme averaged $601,000 per year over the period of the current price path. [Operating costs as defined in the NSP exclude the indirect and overhead costs allocated to renewals expenditure.] The projected efficient average operating costs in the NSP for 2011-16 are $770,000 per annum.

Other Stakeholders

CANEGROWERS (2011a) contended that there needs to be a thorough review of operating costs over the next five years compared to efficient costs used for the existing price path to ensure that any cost increases above the efficient costs determined for the existing price path are clearly justified and if they are not then these costs should also be removed from efficient costs for this price path.

CANEGROWERS contended that it is not acceptable to just ignore the outcomes of the last efficiency review since comparisons can still be made and there are many valuable lessons to be learnt for this price review.

MSF (2011) noted that efficient operating costs for the proposed price path in the NSP average $770,000, a 28.1% increase over the current price path average of $601,000. In addition, MSF questioned why:

(a) operating costs are not correlated with water use;

(b) operating costs in 2009-10 and 2010-11 were approximately 94% higher than that in 2006-07 yet water use was less;

(c) labour costs in 2009-10 have more than doubled from 2006-07 yet water use was less than in 2006-07. Further, 32.4% of labour costs were attributed to asset management which did not align with the level of planned renewals as quite a few of renewals programme have been identified by SunWater as either being pushed back or downgraded to refurbishment. MSF contended that with the massive level of asset management cost it would expect a higher standard of renewals planning.

Further, if the renewals expenditure on the Walkers Point Pump Station upgrades are going to improve labour efficiencies, why is this not shown in decreasing labour costs in the NSP; and

(d) electricity costs not being correlated to water use in the distribution system and the NSP comments about the difficulty in forecasting electricity costs. Further, 67% increase in projected electricity costs seems more than the increase in electricity price.

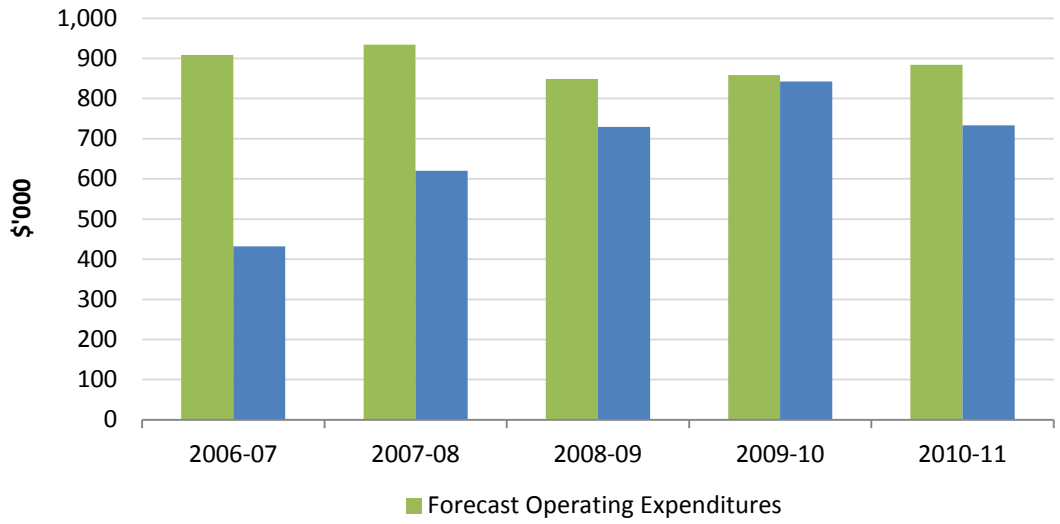
Authority's Analysis

The Authority has sought to review the extent to which previously anticipated cost savings (identified prior to the 2006-11 price paths) have been incorporated into SunWater's total cost estimates for the purpose of 2012-17 prices.

In Volume 1, the Authority noted that during the beginning of the 2006-11 price paths, SunWater's total operating costs increased above those previously forecast. In response, in July 2009, SunWater instigated a program to reduce costs by $10 million (the Smarter Lighter Faster Initiative (SLFI)). SunWater submitted that these savings should be fully realised by 30 June 2012.

In 2011, the Authority engaged Indec to assess whether SunWater achieved the cost savings forecast in 2005-06. A comparison of forecast and actual operating costs for the Lower Mary WSS is shown in Figure 5.3 below. For this scheme, SunWater's actual operating costs were less than Indec's forecast efficient operating costs over the period. Indec noted that anomalies could arise for the service contracts from linked bulk and distribution systems and the solution was to combine them into bundled schemes. See Volume 1.

Figure 5.3: Forecast and Actual SunWater Operating Expenditure 2006-11 (Real $'000)



Source: SunWater (2011ap) and Indec (2011f)

Indec has not, however, inferred from its analysis that SunWater should alter its costs over the 2012-17 regulatory period to the level of efficient costs determined for 2011. It observed that further analysis would be required to justify and support such an inference (see Volume 1). The Authority has engaged other consultants to address potential scheme specific cost savings.

5.3 Non-Direct Costs

Since structural reforms were implemented, SunWater has become a more centrally organised business. SunWater's strategic operational management (for example, Finance, Strategy and Stakeholder Relationships) is provided centrally. This arrangement seeks to ensure that appropriate systems and processes are in place, are being applied in a consistent manner, are addressing key regulatory compliance and business requirements; and to ensure a high degree of flexibility across SunWater's workforce.

Some specialist operations staff with expertise in key operational areas may be located either in Brisbane or regional locations. Their specialist expertise is applied to technical problems and issues in support of local operators.

Operational works planning and maintenance scheduling is provided by regional management, although all staff positions and budgets are managed centrally. For example, spare capacity in one region will be diverted (and billed) to regions with higher demand. Similarly, staff may be assigned to either irrigation or non-irrigation service contracts.

The nature of these non-direct activities, as either indirect or overhead costs, is detailed in 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.

Stakeholders

SunWater

As noted in Volume 1, SunWater submitted that it will incur $23.5 million in total non-direct costs in 2012-13 (Table 5.3). SunWater's approach to the forecasting of non-direct operating expenditures is detailed in Volume 1.

In brief, SunWater forecast non-direct costs for 2010-11 and then escalated these forward using indices applied to the components of these costs. The costs in 2010-11 were based on actual costs over the past four years (excluding spurious costs) and adjustments for known or expected changes in costs. In particular, SunWater proposed that salaries and wage costs generally will rise by 4% per annum. However, SunWater has forecast that its total salaries and wages will rise by only 2.5% per annum, with the difference (1.5% per annum) being accounted for by (unspecified) productivity improvements.

SunWater proposed that the total direct labour costs (DLCs) of each service contract be used to allocate non-direct costs.

Total non-direct costs and those allocated to the Lower Mary Distribution System are in Table 5.3 below.

Table 5.3: SunWater's Actual and Proposed Non-Direct Costs (Real $'000)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
SunWater	27,831	25,097	25,872	24,579	21,130	23,770	23,512	24,244	24,055	23,708	25,089
Lower Mary Distribution	241	360	441	403	403	376	367	452	353	325	316

Source: SunWater (2011ap).

The non-direct costs for this scheme include a portion of SunWater's total overhead costs (for example, human resources (HR), information, communication and technology (ICT) and finance), as well as a share of Infrastructure Management costs for each region (South, Central, North and Far North) and a share of the overhead costs of SunWater's Infrastructure Development Unit.

Other Stakeholders

CANEGROWERS (2011a) submitted that:

(a) SunWater's structure seems to bear little resemblance to what is required to efficiently deliver water to irrigation customers. CANEGROWERS noted that from the surface SunWater appeared to be a very centrally controlled organisation with a top heavy structure and a significant overstaffing as well as duplication of roles.

CANEGROWERS questioned the placement of regional operations managers at the far bottom level of the organisational structure yet they were the key scheme operations personnel dealing with customers. CANEGROWERS contended that this highlights the lack of importance placed by SunWater on scheme management;

(b) the need to apply a five percent loading to non-labour costs is unclear. Further, the true marginal cost of overheads to purchases needs to be better justified and if there is no marginal cost then the overheads should not be added, particularly given SunWater's assertion that only electricity costs are variable costs;

(c) the method to allocate overhead costs by direct labour costs favours capital intensive activities and schemes over labour intensive ones. CANEGROWERS questioned the appropriateness of penalising schemes that have been maintained in an outdated way [labour intensive] relative to a modernised/automated one;

(d) there seems to be arbitrary allocation of costs items between bulk, distribution and other;

(e) the extremely high level of SunWater overheads and the fact that too high a cost is apportioned to distribution versus bulk system has delivered some unbelievable and unrealistic overhead costs for many schemes. The overhead costs for Lower Mary Distribution System is staggering and results in around $40/ML overheads for a 10,000ML scheme;

(f) the comparison in costs to State Water Corporation is of no value as there is no point benchmarking against an inefficient government entity from another state. CANEGROWERS submitted that there is much more value in comparing to efficient businesses and the Pioneer Valley Water Board (PVWater)would be a good comparison on a scheme by scheme basis; and

(g) there has been an increase in SunWater non-scheme business over the past decade. CANEGROWERS submitted that perhaps a cost allocation methodology based on revenue may better reflect effort.

MSF (2011) submitted that the figures presented in the NSP were at such a high level such that it was difficult to comment on the allocation of indirect and overheads costs. Further, MSF found it difficult to comment on the Deloitte Touche Tohmatsu (Deloitte) report dated 27 March 2011 as MSF did not understand all of the cost groupings.

MSF questioned the efficiency of these costs, noting the [high] proportion of indirect and overheads cost in operating cost. Further, MSF questioned whether the centralisation of customer services to Brisbane has resulted in a decrease in costs to the Lower Mary WSS or any other schemes and that if there has not been a cost reduction, the justification for this.

MSF stated their disagreement with Deloitte report, where Full Time Equivalents (FTEs) are used as the comparator to remove differences in remuneration scales and differences in foreign exchange and timing.

Authority's Analysis

As noted in Volume 1, the ratio of non-direct to total costs reflects the structure of the organisation. A more centralised organisation can be expected to have a higher ratio of non-direct to direct costs.

In seeking to establish prudency and efficiency, the Authority commissioned Deloitte to review SunWater's non-direct costs. Deloitte carried out benchmarking to assess where potential efficiencies within SunWater may be achieved. Deloitte identified savings of $495,314 (in 2010-11 dollars) per annum in finance, human resources, information technology, and health, safety, environmental and quality areas (for the whole of SunWater).

Deloitte was unable to draw any definitive conclusions from an attempt to benchmark against PVWater and other Australian rural water service providers. Deloitte noted that PVWater's non-direct costs were higher than those of SunWater as a percentage of total operating costs – but that there are differences between PVWater and SunWater which made the comparison unreliable.[7]

The Authority accepted that $495,314 of FTE staff costs were not efficient and should be excluded from SunWater's (of which an amount of approximately $297,189 relates to irrigation service contracts under SunWater's proposed cost allocation methodology). See Volume 1.

In addition, the Authority recommends that SunWater's forecast total non-direct operating costs should be reduced by a compounding 1.5% per annum (based on the Authority's view that non-labour productivity gains are achievable in line with labour productivity gains).

The Authority has also reviewed the allocation of non-direct costs to irrigation service contracts.

SunWater's proposed use of DLCs is on the basis that it: best reflects activity and effort; is a proxy for other drivers; and provides consistency across service contracts.

[7] For example, PVWater have only four FTE staff. For the benchmarking exercise, PVWater needed to estimate the proportion of staff time spend on administration versus operations and maintenance activities, which varied considerably depending on weather conditions and workloads. Deloitte found it difficult to compare PVWater's estimated apportionments with SunWater, who have around 500 staff assigned to specific projects or centralised functions.

Deloitte reviewed SunWater's proposed and identified alternative cost allocation bases (CABs). On the basis of this analysis, the Authority concludes that no alternative CAB is superior to DLC and that the introduction of any alternative would likely be costly and complex.

On this basis, the Authority has therefore accepted SunWater's proposed DLC methodology with two exceptions recommended by Deloitte:

(a) the overhead component of Infrastructure Management (Regions) should be allocated directly to the service contracts serviced by each relevant resource centre (South, Central, North and Far North), on the basis of DLC from each respective resource centre (that is, targeted DLC); and

(b) the overhead component of the Infrastructure Development unit should be allocated (on the basis of DLC) to service contracts receiving services from that unit (that is, targeted DLC).

This adjustment ensures that schemes are paying for the overhead costs from those resource centres that that are most directly related to their schemes and not, for example, for Infrastructure Management overhead costs from the other three regions.

The Authority's recommended level of non-direct costs to be recovered from the Lower Mary Distribution System (from all customers) is set out in Table 5.4 below. The allocation of these costs between high and medium priority customers is discussed below.

Table 5.4: Recommended Non-Direct Costs (Real $'000)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
SunWater	241	360	441	403	403	376	367	452	353	325	316
Authority							308	329	332	301	289

Source: SunWater (2011ap).

Insurance and labour utilisation rates (which affect non-direct and direct costs) are addressed in Volume 1.

5.4 Direct Costs

Introduction

SunWater classified its operational activities into operations, preventive maintenance, corrective maintenance and electricity. SunWater's operating costs were forecast using this classification. The nature of these activities and costs are identified further below.

With the exception of electricity, SunWater has disaggregated each of the above activities into the following cost types:

(a) labour – direct labour costs attributed directly to jobs, not including support labour costs such as asset management, scheduling and procurement, which are included in administration costs;

(b) materials – direct materials costs attributed directly to jobs, including pipes, fittings, concrete, chemicals, plant and equipment hire;

(c) contractors – direct contractor costs attributed directly to jobs, including weed control contractors, commercial contractors and consultants; and

(d) other – direct costs attributed directly to service contracts, including insurance, local government rates, land tax and miscellaneous costs.

Stakeholder Submissions

SunWater

SunWater estimated the costs of each activity in 2010-11, based on actual costs over the past four years (excluding spurious costs) with adjustments for known or expected changes in costs. Adjustments were also made to preventive maintenance in line with the PB (2010) review. These estimates were then escalated forward for the 2012-17 pricing period. Further details are outlined in Volume 1.

SunWater's forecast direct operating expenditure by activity is set out in Table 5.5 below. These estimates reflect SunWater's most recent positions and differ from the NSP. The estimates also reflect the most recent information provided by SunWater to the Authority in October 2011.

Table 5.5: SunWater Direct Operating Expenditures by Activity (Real $'000)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations	19	35	89	86	133	127	128	128	128	128	128
Electricity	73	91	22	154	39	141	167	180	194	211	227
Preventive Maintenance	64	90	100	73	80	113	115	115	116	116	116
Corrective Maintenance	35	44	77	127	78	83	85	85	86	87	87
Total	**191**	**260**	**288**	**440**	**331**	**465**	**495**	**509**	**524**	**542**	**558**

Note: Totals vary from NSP due to SunWater's revised approach to insurance and electricity, exclusion of revenue offset (which is dealt with in the following chapter), and rounding. The estimates also reflect the most recent information provided by SunWater to the Authority in October 2011. Source: SunWater (2011ap).

Table 5.6 presents the same operating costs developed by SunWater on a functional basis.

Table 5.6: SunWater Direct Operating Expenditures by Type (Real $'000)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Labour	78	106	158	184	170	202	205	205	205	205	205
Electricity	73	91	22	154	39	141	167	180	194	211	227
Contractors	5	8	47	34	33	15	15	15	15	16	16
Materials	24	37	49	58	38	54	55	56	57	58	58
Other	12	19	12	10	50	52	52	52	52	52	52
Total	**191**	**260**	**288**	**440**	**331**	**465**	**495**	**509**	**524**	**542**	**558**

Note: Totals vary from NSP due to SunWater's revised approach to insurance and electricity, exclusion of revenue offset (which is dealt with in the following chapter), and rounding. The estimates also reflect the most recent information provided by SunWater to the Authority in October 2011. Source: SunWater (2011ap).

Authority's Analysis

The Authority engaged Aurecon to review the prudency and efficiency of SunWater's proposed direct operating expenditure for this system.

Aurecon (2011) reported that the major limitation to its review was the lack of precise information from SunWater, particularly given the tight time frames for its study. Although Aurecon found that SunWater staff were willing to provide information as requested, a number of difficulties were still encountered, including that:

(a) reports due for completion in 2010, were still incomplete during the review period;

(b) obtaining operational trend expenditure information was difficult due to the implementation of the Business Operating Model (BOM) and management accounting system;

(c) historical cost data, which had been re-coded for entry into the BOM, could not be traced or verified;

(d) the capacity of the BOM to extract specific data for analysis was limited;

(e) the incorporation of indirect and overhead costs in all activities made it difficult to assess the activity related expenditure; and

(f) retrieving information regarding individual assets was difficult.

Aurecon also noted that SunWater has developed a new electronic Asset Management System, which has greatly improved information capture and asset management data, but access to all components of this system is limited to a handful of computers and personnel located within the Brisbane office. Extracting specific asset information was extremely time-consuming for all involved.

Aurecon concluded that SunWater underestimated the level of detail and information required for the review. This impacted SunWater's capacity in many cases to provide the requested information within the required timeframes. Aurecon therefore found that significant information gaps still exist, which hindered its capacity to adequately assess the prudency and efficiency of all proposed operational expenditure.

In Volume 1, the Authority recommends that SunWater undertake a review of its planning policies, processes and procedures to better achieve its strategic objectives. The Authority also recommends that SunWater needs to improve the usefulness of its information systems. In particular, SunWater needs to document and access relevant information necessary to:

(a) attain greater operating efficiency;

(b) achieve greater transparency;

(c) facilitate future price reviews; and

(d) promote more meaningful stakeholder engagement.

Aurecon's review of specific cost categories for this scheme and the Authority's conclusions and views on cost escalation are outlined below.

Item 1: Operations

Stakeholder Submissions

SunWater

Operations relate to the day-to-day operational activity (other than maintenance) enabling water delivery, customer management, asset management planning, financial and ROP reporting, workplace health and safety compliance, administration and environmental and land management.

SunWater's operating expenditure forecasts have been developed on the basis of detailed work instructions and operational manuals for each scheme.

SunWater's proposed operations costs are set out in Table 5.5 above.

Other Stakeholders

CANEGROWERS (2011a) contended that it was extremely difficult to make any informed comments on operations costs since the headings used are general and high level and consequently are not conducive to scrutiny. Detail at least one level down needs to be provided. Further, there needs to be a thorough review of operating costs over the next 5 years compared to efficient costs used for the existing price path. In addition, 40% of operating costs are overheads while insurance is $41,000.

MSF (2010) contended that it was exceptionally difficult to comment on the issues papers when they were not aware of SunWater's efficient operations, maintenance and administrative costs. MSF noted that if the renewals expenditure on the Walkers Point pump station upgrades are going to improve labour efficiencies why is this not shown in decreasing labour costs in the NSP.

Authority Analysis

Aurecon's Review

Aurecon reviewed SunWater's Operations costs in more detail as shown in Table 5.7.

Table 5.7: Operations Expenditure bv Type ($2010-11, $'000)

Type	*Actuals*				*Forecast*	*Forecast*				
	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*
Labour	18	29	52	66	73	74	75	75	75	75
Materials	-	-	1	-	1	1	1	1	1	1
Contractors	-	-	28	10	-	-	-	-	-	-
Other	1	6	8	10	50	49	49	49	49	49
Total Direct Costs	**19**	**35**	**89**	**86**	**124**	**124**	**125**	**125**	**125**	**125**
Indirects	22	40	58	37	39	34	40	41	41	40
Overheads	26	32	58	71	74	75	75	76	77	75
Total	**67**	**107**	**205**	**194**	**237**	**233**	**240**	**242**	**243**	**240**

Source: Aurecon (2011b). Note: This table is based on SunWater's original NSP and may differ from more recent SunWater data.

Particular observations by Aurecon were that:

(a) operations costs comprise between 18.8% (2006-07) and 33.3% (2009-10) of total operating costs;

(b) operations costs in 2011 are projected to rise further to $237,000, yet water usage levels for 2009-10 are projected to be lower than that for 2009-10;

(c) overheads and indirects represent 47.7% of the total cost in 2010-11; and

(d) cost items in the 'other' category included insurance ($41,000 in 2010-11), rates ($7,000) and other local administrative costs including telephone, etc. In its report on Lower Mary WSS, Aurecon noted that 'other' costs have declined substantially in 2010-11 and that this may be due to a component of insurance costs being transferred from the bulk scheme to the distribution scheme.

Aurecon provided a summary of the operations costs by activity for the four years 2006-10 (Table 5.8).

Table 5.8: Operations Expenditure by Activity ($2010-11, $'000)

	2006-07	*2007-08*	*2008-09*	*2009-10*
Customer Management	7	-	-	8
Workplace H&S	-	-	-	3
Environmental Management	-	-	-	-
Water Management	-	-	2	-
Scheme Management	-	6	108	140
Dam Safety	-	-	-	-
Schedule /Deliver	61	92	87	36
Metering	-	9	8	7
Facility Management	-	-	-	-
Other	-	-	-	-

Source: Aurecon (2011b). Note: includes indirect and overhead costs. This table is based on SunWater's original NSP and may differ from more recent SunWater data.

Significant items include:

(a) scheme management – activities related to the preparation and provision of reports and statistics for clients, including meetings with clients reviewing contract progress/performance, energy management including the review of electricity consumption tariffs and accounts, land and property management including legal advice, Operations and Maintenance Manual development, OMS plans, Facility Contingency Plans and Emergency Action Plans (EAP) for all facilities other than dams, SLMPs, insurance costs, rates and land taxes; and

(b) schedule/deliver – activities related to scheduling, releasing, operation of pump stations and SCADA, system surveillance including monitoring of water entitlement and observation of and reporting of any breaches, flood operations preparation, water harvesting, ROP compliance of water levels and flows and reporting of water information.

Aurecon noted that SunWater's proposed operations cost of $124,000 for 2010-11 more than doubled the four-year historical average of $57,000.

Aurecon noted stakeholders have raised the issue that there are more cost effective strategies to avoid reading 'sleeper' meters each quarter by SunWater staff. In response to Aurecon's questions, SunWater confirmed that there was no additional meter installed since 2008-09 and that metering costs has actually decreased by $2,000 in 2009-10. Aurecon noted that this possibly indicates that SunWater has identified substantial labour efficiencies in reading meters.

Further, Aurecon noted that quarterly meter reading is a statutory requirement.

Aurecon noted that the provision of disaggregated historical activity data for Operations by SunWater provided substantial insights, but also identified substantial activities and issues requiring additional information and explanation from SunWater.

Aurecon noted that SunWater was not able to provide 2010-11 cost estimates for the sub-activities which Aurecon views as critical in verifying the prudency and efficiency of these costs. Aurecon recommends that to verify the prudency and efficiency of 2010-11 expenditure, the following information and analysis is required:

(a) the 2010-11 cost estimates for sub-activities be released and examined to ensure compliance with SunWater's averaging methodology (preceding 4/5 years); and

(b) that cost estimates for metering be examined and projected based on 2009-10 costs (assuming that it represents improved efficiencies in reading meters, as costs are lower than the preceding years.

Due to the above data limitations, Aurecon was unable to validate fully the prudency and efficiency of operations costs.

Conclusion

In Volume 1, the Authority recommended that SunWater staff continue to conduct all quarterly meter reads.

The Authority notes that Aurecon was unable to validate the prudency and efficiency of SunWater's operations costs due to insufficient information.

The Authority notes that Aurecon did not recommend any adjustment to forecast operations costs, and has therefore not made any specific adjustments to SunWater's proposed operations costs.

Item 2: Preventive Maintenance

Stakeholder Submissions

SunWater

SunWater defines preventive maintenance as maintaining the ongoing operational performance and service capacity of physical assets as close as possible to designed standards. Preventive maintenance is cyclical in nature with a typical interval of 12 months or less.

Preventive maintenance includes:

(a) condition monitoring: the inspection, testing or measurement of physical assets to report and record its condition and performance for determination of preventive maintenance requirements; and

(b) servicing: planned maintenance activities normally expected to be carried out routinely o physical assets.

Preventive maintenance costs are based on the updated work instructions developed for operating the scheme and an estimate of the resources required to implement that scope of work.

SunWater's proposed costs for this item are identified in Table 5.5 above.

Other Stakeholders

No other stakeholders have commented on this item.

Authority Analysis

Aurecon's Review

Aurecon observed that:

(a) as a proportion of total operating costs, preventive maintenance costs have varied from 23.2% in 2009-10 to 44.4% in 2006-07. Compared with the 2006-07 level, it has risen by 52.5% in 2010-11. Further, the projected cost in 2010-11 represents an increase of 19.3% over the historical average;

(b) weed control was a key activity. Aurecon noted that historically less than $4,000 in materials was utilised for weed control activity. Considering the small amount spent on materials, Aurecon estimated that either only a partial cylinder of acrolein (full 200L cylinder costs approximately $6,000) was used for aquatic weed control, or that chemicals for weed control on land was only utilised.

Aurecon noted that weed control costs have continued to rise from $30,000 in 2006-07 to $60,000 in 2009-10, yet water use in 2009-10 was lower than that in 2006-07.

Aurecon also noted that contractors were also utilised for weed control within the scheme at an annual cost between $2,000 to $4,000;

(c) in 2006-07, costs that should have been coded to refurbishment were included in preventive maintenance causing a spike in these costs;

(d) there seemed to be no correlation between preventive maintenance and water use. For 2010-11 costs are projected to increase yet water use is projected to decline; and

(e) in 2010-11, 53.9% of preventive maintenance costs were indirect costs and overheads, 35.3% was accounted for by labour and 5.8% by materials.

Weed control activities typically undertaken by SunWater in its distribution schemes include:

(a) acrolein chemical dosing for control of aquatic weeds within channels;

(b) a range of other chemicals for the control of terrestrial weeds; and

(c) mechanical weed control options including raking, slashing, burning, etc.

Aurecon noted that SunWater's proposed labour costs for preventive maintenance of $38,073 are informed by PB in 2010. PB proposed that for 2010-11 a total of 743 hours would require a total of $38,073 for condition monitoring and servicing. Aurecon noted the discrepancy between SunWater's historic wage rates and those recommended by PB.

With projected labour cost at $85,000 for 2010-11, the remaining labour cost allocated to weed control is $47,000, more than double the $22,000 labour cost allocated to weed control in 2009-10.

Aurecon was unable to substantiate the calculations and data used by SunWater to determine the projected costs for 2010-11.

While noting that the historical average annual labour cost for the preceding four years has been $55,000, Aurecon recommended that labour for preventive maintenance be set at $60,000 comprising $38,000 as suggested by PB for monitoring and servicing and $22,000 for weed control as incurred in 2009-10.

SunWater's Response

In relation to Aurecon's suggested reductions in labour costs related to preventive maintenance based on a four-year historical average, SunWater submitted that past data is not a reliable indicator of actual costs or work. SunWater noted that some past preventive maintenance at storages was booked to operations, rather than preventive maintenance.

SunWater considered that the PB review (which informed SunWater's submission) identified the labour effort and materials – contractor costs for each maintenance item from first principles. SunWater submitted that this was a thorough and detailed review undertaken by an independent party, is forward looking and is the best source of reliable information for the costs forecasts.

In response to Aurecon's comments regarding the difference in wages rates between SunWater's historic costs, and those recommended by PB, SunWater responded that the costs for 2010-11 were based on information received from field staff through consultation. Each preventive maintenance job was costed by identifying the different staff required to complete the work. Depending on the level of employee, different hourly labour rates were used.

Further, SunWater submitted that, in reviewing its preventive maintenance activity costs, Aurecon (and Halcrow in its review of WSSs in the North region) tried to evaluate the costs by sub-activity.

SunWater submitted that its expenditure forecasts, particularly labour costs, are not intended to be viewed at the sub-activity level, and indeed examining labour costs even at the activity level should be done with some caution. This is because labour is shared between activities and schemes, and any examination of the costs will tend to be more about the assumptions about how the existing workforce will spend its time, rather than an overall assessment of efficiency.

SunWater accepted that discrepancies exist when comparing the 'residual' labour costs for weed control against historic costs for weed control. However, SunWater did not recommend examining costs at the sub-activity level, given:

(a) historic costs are heavily dependent on how employees have recorded their time, and there is scope for error in these entries; and

(b) forecasts were developed at the activity, not sub-activity level. Attempts to recreate a labour or other cost at the sub activity level will be fraught and misleading.

SunWater suggested that a better approach, which more closely aligns with its workforce arrangements, is to examine the labour costs for each WSS at the scheme level, and assess whether the total labour dedicated to that scheme is efficient for a given level of workload.

SunWater did not agree with recommendations made in relation to preventive maintenance costs which are made on the basis of examining labour costs at the sub activity level.

Conclusion

In Volume 1, the Authority noted that most of its consultants considered that that there is scope for SunWater to achieve further efficiencies once the balance of preventive and corrective maintenance is optimised. The Authority considered that this potential for efficiency could be addressed via the broad efficiency measures imposed on SunWater schemes (noted further below).

In Volume 1, the Authority also recommended that SunWater implement PB's earlier recommendations that:

(a) SunWater's maintenance plans and work instructions; and associated labour inputs and unit costs should be audited, including a review of sub-contracted maintenance activities;

(b) maintenance practices and costs need to be examined to identify the optimum mix of preventive and corrective maintenance activities for each scheme; and

(c) a Reliability Centred Maintenance (RCM) approach to formulating maintenance activity requirements should be adopted.

On the basis of Aurecon's advice, the Authority has not made any specific adjustment to preventive maintenance costs.

Item 3: Corrective Maintenance

Stakeholder Submissions

SunWater

SunWater's proposed costs for this item are identified in Table 5.5 above.

SunWater submitted that even with sound preventive maintenance practices, unexpected failures can still occur or other incidents can arise that require reactive corrective maintenance.

SunWater identifies two types of corrective maintenance activities:

(a) emergency breakdown maintenance which refers to maintenance that has to be carried out immediately to restore normal operation or supply to customers or to meet a regulatory obligation (e.g. rectify a safety hazard); and

(b) non-emergency maintenance which refers to maintenance that does not have to be carried out immediately to restore normal operations, but needs to be scheduled in advance of the planned maintenance cycle.

SunWater has forecast corrective maintenance based on past experience. This provision includes a portion of labour costs in the scheme for such events, as well as additional materials and plant hire.

Typical corrective maintenance examples on drains and channels are:

(a) erosion repairs;

(b) flow meter repairs and replacements;

(c) removing weed blockages;

(d) repairing regulating gates, pumps and control systems; and

(e) repairing pipe leaks and seals on offtake gates.

SunWater's corrective maintenance forecast does not include any costs of damage arising from events covered by insurance.

Other Stakeholders

No other stakeholders have commented on this item.

Authority Analysis

Consultant's Review

Aurecon noted that corrective maintenance costs mainly related to indirect costs and overheads (43.8%), labour (28.1%), materials (11.6%), other direct (11.0%) and contractors (5.5%).

Aurecon noted that the average annual direct cost (2006-2010) was $71,000 (excluding indirect costs and overheads). This compares to SunWater's forecast of $82,000 for the period starting in 2010-11. Aurecon noted that the average annual direct cost between 2007-08 and 2009-10 is $83,000.

Aurecon noted the difficulty in forecasting corrective maintenance costs, and that SunWater's approach of using historical expenditure as a basis for forecasting is commonly used by other water utilities. However, Aurecon was unable to substantiate the calculations and data used by SunWater to arrive at 2010-11 forecast cost. Consequently, Aurecon was unable to validate the prudency and efficiency of the proposed cost. Therefore, Aurecon recommended that SunWater provide additional detail regarding the data and methodology SunWater used to arrive at the proposed direct corrective maintenance expenditure of $82,000 in 2010-11.

SunWater's Response

In relation to Aurecon's question of why proposed corrective maintenance cost was $11,000 higher than the four-year average, SunWater submitted that the forecast for corrective maintenance was made based on the expected operating conditions for the Lower Mary Distribution System over 2011-16.

SunWater noted that Aurecon's Table 7-6 shows that corrective maintenance cost is forecast to be 19.6% of operating costs in 2010-11, compared with the use of four-year average of 24.5% [as employed by Aurecon] . In addition, Aurecon did not consider the impact of above consumer price index (CPI) cost escalations in their analysis.

Conclusion

As noted above, in Volume 1, the Authority recommended an optimal mix of preventive and corrective maintenance should be pursued by SunWater. Further, for corrective maintenance, that SunWater formally document its processes for the development of correct maintenance expenditure forecasts.

In the absence of any measure of the impact of the optimisation process, the Authority does not proposed to apply any specific adjustments to this measure but intends to take this into account when considering the application of a general efficiency target.

On the basis of Aurecon's advice, the Authority has not made any specific adjustment to corrective maintenance.

Item 4: Electricity

Stakeholder Submissions

SunWater

SunWater submitted that the electricity costs for the distribution system mostly relate to the operation of the Copenhagen, Owanyilla, Main Road and Walker Point Pump Stations. Further, SunWater claimed that electricity costs are difficult to forecast accurately because volumes pumped, electricity consumption and electricity prices cannot be reliably projected.

SunWater initially proposed that electricity costs increase in line with inflation with prices adjusted annually (cost pass through) to reflect the actual change in electricity costs (2011h).

SunWater subsequently proposed to escalate electricity prices by 10.5% per annum over the regulatory period reflecting the average in the Benchmark Retail Cost Index (BRCI) between 2007-08 and 2011-12, together with further adjustments in 2012-13 and 2015-16 to reflect expected increases from the introduction of the carbon tax and carbon trading scheme (2011ak).

Other Stakeholders

MSF (2011) questioned why electricity costs are not correlated to water use in the distribution system and the NSP comments about the difficulty in forecasting electricity costs. Further, MSF viewed that the 67% increase in projected electricity costs seemed more than the increase in electricity price.

Authority's Analysis

Aurecon's Review

Aurecon noted that 13.7% of total electricity costs was attributed to Copenhagen Bend Pump Station, 12.0% to Main Roads Pump Station, 35.6% to Walker Point Pump Station and 38.7% to Owanyilla Pump Station.

Aurecon noted that to a large degree, electricity costs would be expected to correlate closely with water use. However, Aurecon found that electricity costs in 2009-10 ($154,000) were more than twice that for 2006-07 ($73,000), yet water use in 2009-10 was only 70% of that of 2007.

Nevertheless, Aurecon recognised that customers will only pay electricity directly associated with water delivered.

Conclusion

In Volume 1, the Authority recommended that SunWater review the cost differential between franchise and contestable electricity contracts on an annual basis. Further, that SunWater report back to stakeholders on the success (or otherwise) of its energy savings measures, and quantify the savings that have been achieved.

As also noted in Volume 1, the Authority proposes electricity be escalated at 7.41% per annum, based on expected growth in the four key components of electricity prices – network costs, energy costs, retail operating costs and retail margin.

At this stage, the Authority does not accept an escalation rate that makes an explicit allowance for carbon price impacts prior to them becoming enacted legislation.

The Authority has adjusted proposed electricity costs as set out in Table 5. below.

Item 5: Cost Escalation

As noted in Volume 1, the Authority's consultants were required to examine the appropriateness of SunWater's proposed cost escalation methods (electricity has been dealt with above).

Direct Labour

The consultants generally agreed that SunWater's labour escalation forecast using the general inflation rate (2.5%) underestimated the likely actual movement in the cost of labour.

Evidence cited included the growth in both the Labour Price Index for the Electricity, Gas, Water and Waste Services Industry and the Labour Price Index for Queensland, which have averaged around 4% per annum in recent years, and recent forecasts by Deloitte suggesting an average increase in the labour costs facing Queensland's utilities sector of 4.3% per annum between 2011-12 and 2017-18.

The Authority recommends that labour costs be escalated at 4% per annum.

Direct Materials and Contractors

Most consultants agreed that SunWater's proposed escalation factor of 4% per annum for this component of cost was appropriate. Evidence in support included the historical analysis of Australian Bureau of Statistics (ABS) construction cost data and forecasts of industry trends. However, both Halcrow and GHD considered that SunWater had not provided sufficient rationale for its proposed escalation factor of 4% per annum for direct materials and contractor services, and that these costs should be escalated at the general rate of inflation.

The Authority recommends that direct materials and contractor costs be escalated at 4% per annum.

Other Costs

The Authority accepts SunWater's proposal to escalate other direct costs and all non-direct costs by the general inflation rate as these costs are primarily administrative and management functions.

Conclusion

A comparison of SunWater's and the Authority's direct operating costs for the Lower Mary Distribution is set out in Table 5.9.

The Authority's proposed costs include all specific adjustments and the Authority's proposed cost escalations as noted above. As noted in Volume 1, the Authority has applied a minimum 2.43% saving to direct operating costs (excluding electricity) in 2012-13. A further 0.75% saving arising from labour productivity is also applied, compounding annually.

Table 5.9: Direct Operating Costs (Real $'000)

	SunWater					*Authority*				
	2012-13	***2013-14***	***2014-15***	***2015-16***	***2016-17***	***2012-13***	***2013-14***	***2014-15***	***2015-16***	***2016-17***
Operations	128	128	128	128	128	122	123	123	123	123
Electricity	167	180	194	211	227	143	148	154	161	169
Preventive Maintenance	115	115	116	116	116	106	107	107	108	109
Corrective Maintenance	85	85	86	87	87	81	81	82	82	82
Total	**495**	**509**	**524**	**542**	**558**	**452**	**459**	**466**	**474**	**482**

Note: Totals vary from NSP due to SunWater's revised approach to insurance and electricity, exclusion of revenue offset (which is dealt with in the following chapter), and rounding. The estimates also reflect the most recent information provided by SunWater to the Authority in October 2011. Source: SunWater (2011ap).

5.5 Cost Allocation According to WAE Priority

It is necessary, in most schemes, to allocate operating costs to the different priority groups. In Volume 1, the Authority recommended that they be allocated to medium and high priority customers using current WAEs. Variable costs should be allocated to medium and high priority WAE on the basis of water use.

However, there are no high priority distribution WAEs in the Lower Mary Distribution System. Therefore, there is no need to allocate between priority groups. All distribution system operating costs are allocated to medium priority WAE.

As discussed above, the bulk costs associated with high (and medium) priority distribution losses will be recovered fully from medium priority customers.

5.6 Summary of Operating Costs

SunWater's proposed operating costs by activity and type are set out in Table 5.10. The Authority's recommended operating costs are set out in Table 5.11.

Table 5.10: SunWater's Proposed Operating Costs (Real $'000)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations					
Labour	76	76	76	76	76
Materials	0	0	0	0	0
Contractors	1	1	1	1	1
Other	52	52	52	52	52
Non-direct	117	119	119	117	111
Preventive Maintenance					
Labour	88	88	88	88	88
Materials	7	7	7	8	8
Contractors	20	20	21	21	21
Other	0	0	0	0	0
Non-direct	134	136	137	133	127
Corrective Maintenance					
Labour	42	42	42	42	42
Materials	8	8	8	8	8
Contractors	35	35	36	36	36
Other	0	0	0	0	0
Non-direct	66	67	67	66	63
Electricity	167	180	194	211	227
Total	**811**	**830**	**847**	**858**	**860**

Note: Totals vary from NSP due to SunWater's revised approach to insurance and electricity, exclusion of revenue offset (which is dealt with in the following chapter), and rounding. The estimates also reflect the most recent information provided by SunWater to the Authority in October 2011. Source: SunWater (2011ap) and SunWater (2011ao).

Table 5.11: The Authority's Recommended Operating Costs (Real $'000)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations					
Labour	72	73	73	73	74
Materials	0	0	0	1	0
Contractors	0	0	0	0	0
Other	50	49	49	49	48
Non-direct	114	114	113	108	102
Preventive Maintenance					
Labour	80	81	81	82	82
Materials	19	19	19	20	19
Contractors	7	7	7	7	7
Other	0	0	0	0	0
Non-direct	130	130	129	124	116
Corrective Maintenance					
Labour	40	40	41	41	41
Materials	33	33	34	34	33
Contractors	7	7	7	8	7
Other	0	0	0	0	0
Non-direct	64	64	64	61	58
Electricity	143	148	154	161	169
Total	**760**	**767**	**771**	**768**	**758**

Source: QCA (2011).

6. DRAFT PRICES

6.1 Background

Ministerial Direction

The Ministerial Direction requires the Authority to recommend SunWater's irrigation prices for water delivered from 22 SunWater bulk water schemes and eight distribution systems and, for relevant schemes, for drainage, drainage diversion and water harvesting.

Prices are to apply from 1 July 2012 to 30 June 2017.

Recommended prices and tariff structures are to provide a revenue stream that allows SunWater to recover:

(a) prudent and efficient expenditure on renewing and rehabilitating existing assets through a renewals annuity; and

(b) efficient operational, maintenance and administrative costs to ensure the continuing delivery of water services.

In considering the tariff structures, the Authority is to have regard to the fixed and variable nature of the underlying costs. The Authority is to adopt tariff groups as proposed in SunWater's network service plans 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 SunWater'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 2012-17, 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. The cap applied to the sum of Part A and Part B real prices. In each year of the price path, the prices were indexed by CPI. Interim prices in 2011-12 were increased by CPI with additional increases in some schemes.

For this scheme, prices over 2006-11 increased in real terms to achieve lower bound costs in 2008-09, and were maintained in real terms thereafter. In 2011-12, prices in this scheme were increased by CPI.

6.2 Approach to Calculating Prices

In order to calculate SunWater's irrigation prices in accordance with the Ministerial Direction, the Authority has:

(a) identified the total prudent and efficient costs of the scheme;

(b) identified the fixed and variable components of total costs;

(c) allocated the fixed and variable costs to each priority group;

(d) calculated cost-reflective irrigation prices;

(e) compared the cost-reflective irrigation prices with current irrigation prices; and

(f) implemented the Government's pricing policies in recommended irrigation prices.

6.3 Total Costs

The Authority's estimate of prudent and efficient total costs for the Lower Mary Distribution System for the 2012-17 regulatory period is outlined in Table 6.1. Total costs since 2006-07 are also provided. Total costs reflect the costs for the service contract (all sectors) and do not include any adjustments for the Queensland Government's pricing policies.

Table 6.1: Total Costs for the Lower Mary Distribution System (Real $'000)

	Actual Costs						*Future Costs*				
	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
SunWater's Submitted Costs	543	607	706	845	764	1,304	1,344	1,358	1,371	1,378	1,400
Renewals Annuity	162	87	93	108	111	555	546	541	537	533	553
Operating Costs	381	530	639	743	655	762	811	830	847	858	860
Revenue Offsets	0	-10	-25	-6	-2	-13	-13	-13	-13	-13	-13
Authority's Total Costs							1,200	1,200	1,200	1,193	1,175
Renewals Annuity							452	445	441	438	429
Operating Costs							760	767	771	768	758
Revenue offsets							-13	-13	-13	-13	-13
Return on Working Capital							1	1	1	1	1

Note: Costs are presented for the total service contract (all sectors). Costs reflect SunWater's latest data provided to the Authority in October 2011 and may differ from the NSP. Source: Actual Costs (SunWater, 2011al) and Total Costs (QCA, 2011).

6.4 Fixed and Variable Costs

The Ministerial Direction requires the Authority to have regard to the fixed and variable nature of SunWater's costs in recommending tariff structures for each of the irrigation schemes.

SunWater submitted that all of its operating costs are fixed in the Lower Mary Distribution System and that only electricity pumping costs vary with water use.

As noted in Volume 1, the Authority engaged Indec to determine which of SunWater's costs are most likely to vary with water use. Indec identified:

(a) costs that would be *expected* to vary with water use. Indec expected that electricity pumping costs would generally be variable and non-direct costs would be fixed;

(b) all other activities and expenditure types (costs) would be expected to be semi-variable, including: labour, material, contractor and other direct costs, maintenance, operations and renewals expenditures;

(c) costs that *actually* varied with water use in 2006-11, by activity and by type:

  (i) by activity, Indec found that operations, preventive and corrective maintenance and renewals were semi-variable. Electricity was generally highly variable with water use in five distribution systems and two bulk schemes. In three distribution systems electricity pumping costs were semi-variable due to gravity feed;

  (ii) by type, Indec found that labour, materials, contractors and other direct costs were semi-variable. Non-direct costs were fixed;

(d) costs that *should* vary with water use under Indec's proposed optimal (prudent and efficient) management approach (as outlined in Volume 1). On average across all SunWater's distribution systems, Indec considered 67% of costs would be fixed and 33% variable. However Indec proposed that scheme-specific tariff structures should be applied to reflect the relevant scheme costs.

For Lower Mary Distribution System, Indec considered 78% of costs should be fixed and 22% variable under recommended management approach. The Authority notes that this ratio differs from the current tariff structure which reflects the recovery of 70% of costs in the fixed charge and 30% of costs in the volumetric charge.

In general, the Authority accepts Indec's recommended tariff structure, for the reasons outlined in Volume 1.

6.5 Allocation of Costs According to WAE Priority

Fixed Costs

The method of allocating fixed costs to priority groups is outlined in Chapter 4 – Renewals Annuity and Chapter 5 – Operating Costs. The outcome is summarised in Table 6.2.

Table 6.2: Allocation of Fixed Costs According to WAE Priority (Real '000)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Net Fixed Costs	**860**	**860**	**858**	**853**	**838**
High Priority	0	0	0	0	0
Medium Priority	860	860	858	853	838

Source: QCA (2011).

These costs are translated into the fixed charge using the relevant WAE for each priority group.

Variable Costs

Variable costs are allocated to all users on the basis of water use. Volumetric tariffs are calculated based on SunWater's eight-year historical water usage data for all sectors. However, consistent with SunWater's assumed typical year for operating cost forecasts, the Authority has removed from the eight years of data, the three lowest water-use years for each service contract. Accordingly, to determine the volumetric charge, the Authority has assumed historical total water use for all sectors to be 42.6% of WAE.

6.6 Cost Reflective Prices

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

Table 6.3: Medium Priority Prices for the Lower Mary Distribution System ($/ML)

	Actual Prices						***Cost Reflective Prices***				
	2006-07	***2007-08***	***2008-09***	***2009-10***	***2010-11***	***2011-12***	***2012-13***	***2013-14***	***2014-15***	***2015-16***	***2016-17***
Lower Mary River (Mary Barrage)— Bulk											
Fixed (Part A)	8.28	8.52	8.92	9.20	9.48	9.84	4.66	4.77	4.89	5.01	5.14
Volumetric (Part B)	8.83	9.09	9.52	9.82	10.12	10.48	1.94	1.98	2.03	2.09	2.14
Lower Mary Channel (Unbundled)											
Fixed (Part C)	26.04	28.36	29.80	30.76	31.68	34.80	92.31	94.62	96.98	99.41	101.89
Volumetric (Part D)	15.69	17.25	18.15	18.72	19.29	19.98	60.24	61.75	63.29	64.87	66.49
Lower Mary Channel (Bundled)											
Fixed (Part A)	34.32	36.88	38.72	39.96	41.16	44.64	96.97	99.39	101.87	104.42	107.03
Volumetric (Part B)	24.52	26.34	27.67	28.54	29.41	30.46	62.18	63.73	65.32	66.96	68.63

Note: Channel (Bundled) prices are provided for reference only. Source: Actual Prices (SunWater, 2011al) and Cost Reflective Prices (QCA, 2011).

The Authority's recommended draft termination fees to apply to the Lower Mary Distribution System during 2012-17 are outlined in Table 6.4, together with actual termination fees since 2008-09.

Table 6.4: Termination Fees ($/ML)

	Actual Prices				*Cost Reflective Prices*				
	2008-09	***2009-10***	***2010-11***	***2011-12***	***2012-13***	***2013-14***	***2014-15***	***2015-16***	***2016-17***
Lower Mary Channel to:									
Lower Mary River (Tinana Barrage & Teddington Weir)	299.56	226.84	257.04	311.91	1,082.05	1,109.10	1,136.83	1,165.25	1,194 38
Lower Mary River (Mary Barrage)	266.80	263.90	298.94	358.95	1,269 25	1,300.98	1,333.51	1,366.85	1,401.02

Source: Actual Prices (SunWater, 2011al) and Cost Reflective Prices (QCA, 2011).

6.7 Queensland Government Pricing Policies

As noted above, the Queensland Government has directed 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 SunWater'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 2012-17, 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.

Authority's Analysis

To identify the relevant price path (if any), the Authority must first identify whether current prices recover prudent and efficient costs. To do so, given changes to tariff structure, the Authority has compared current revenues with revenues that would arise under the cost-reflective tariffs, if implemented (see Volume 1).

The Authority has calculated these current revenues using the relevant 2010-11 prices, current irrigation WAE and the five-year average (irrigation only) water use during 2006-11 (Table 6.5).

To ensure that distribution customers are not disadvantaged by unbundling, the comparison has included both bulk and distribution system revenues.

On this basis, current revenues are below cost reflective revenues, and the Authority is required to consider a price path for Lower Mary Distribution System customers (Table 6.5).

Table 6.5: Comparison of Current Prices and Cost-Reflective Prices (Real $ 2012-13)

Tariff Group	*2010-11 Prices (indexed to 2012-13)*		*Irrigation WAE (ML)*	*Irrigation Water Use (ML)*	*Current Revenue*	*Revenue from Cost-Reflective Tariffs*	*Difference*
	Fixed	*Variable*					
Channel Bundled	43.24	30.90	9,952	3,938	552,047	1,209,868	-657,821

Source: SunWater (2011al), SunWater (2011ao) and QCA (2011).

In Volume 1, the Authority recommended that, after tariff rebalancing, fixed charges should increase by $2/ML per annum in real terms until cost recovery is achieved. This is consistent with the rate of increase in 2006-11 prices. Volumetric charges are to reflect variable costs from 2012-13.

After tariff rebalancing, the revenue-neutral bundled tariff for the Lower Mary Distribution System is a fixed charge of $30.48 per WAE and $62.18 per ML of usage, and the $2/ML real increase is applied to the fixed charge. At this rate of increase, cost reflective charges are not achieved by the end of the 2012-17 regulatory period. The recommended (unbundled) charge is then calculated by deducting the recommended river charge from the bundled charge.

6.8 The Authority's Recommended Prices

The Authority's recommended prices to apply to the Lower Mary Distribution System for 2012-17 are outlined in Table 6.6, together with actual prices since 2006-07. In calculating the recommended prices, a 10-year average irrigation water use has been adopted (see Volume 1).

Table 6.6: Draft Medium Priority Prices for the Lower Mary Distribution System ($/ML)

	Actual 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***
Lower Mary River – Mary Barrage (Unbundled)											
Fixed (Part A)	8.28	8.52	8.92	9.20	9.48	9.84	12.61	12.92	13.25	13.58	13.92
Volumetric (Part B)	8.83	9.09	9.52	9.82	10.12	10.48	1.94	1.98	2.03	2.09	2.14
Lower Mary Channel (Unbundled)											
Fixed (Part C)	26.04	28.36	29.80	30.76	31.68	34.80	19.87	22.42	25.08	27.86	30.76
Volumetric (Part D)	15.69	17.25	18.15	18.72	19.29	19.98	60.24	61.75	63.29	64.87	66.49
Lower Mary Channel (Bundled)											
Fixed (Part A)	34.32	36.88	38.72	39.96	41.16	44.64	nr	nr	nr	nr	nr
Volumetric (Part B)	24.52	26.34	27.67	28.54	29.41	30.46	nr	nr	nr	nr	nr

Note Prior to 2012-17, channel tariffs were a bundled price for bulk and distribution services. Thus, the fixed Part C tariffs for 2006-12 represent a notional unbundled channel price calculated by deducting Part A River prices from (bundled) Part A Channel prices. Source: Actual Prices (SunWater, 2011am) and Recommended Prices (QCA, 2011).

The Authority's recommended termination fees to apply to the Lower Mary Distribution System during 2012-17 are outlined in Table 6.7, together with actual termination fees since 2008-09. The Authority's recommended termination fees are higher than those charged by SunWater, as the Authority's approach:

(a) recovers 20 years of fixed costs with SunWater bearing the remaining fixed costs. SunWater's approach recovers 10 years of fixed costs with remaining fixed costs paid for by other users;

(b) reflects the Authority's estimate of fixed costs in the cost-reflective fixed charge. The Authority's cost-reflective fixed charge recovers all fixed costs. SunWater's fixed charges recover only a portion of fixed costs. Therefore, some fixed costs are excluded from SunWater's termination fees;

(c) reflects the Authority's cost-reflective fixed charge and not the Authority's recommended fixed charge; and

(d) results in a multiple of up to 13.8 times the Authority's cost reflective fixed charge. SunWater's multiple is up to 9.4 of its fixed charge (Chapter 3).

Table 6.7: Draft Termination Fees ($/ML)

	Actual Prices				*Cost Reflective Prices*				
	2008-09	***2009-10***	***2010-11***	***2011-12***	***2012-13***	***2013-14***	***2014-15***	***2015-16***	***2016-17***
Lower Mary Channel to:									
Lower Mary River (Tinana Barrage & Teddington Weir)	299.56	226.84	257.04	311.91	1,082.05	1,109.10	1,136.83	1,165.25	1,194.38
Lower Mary River (Mary Barrage)	266.80	263.90	298.94	358.95	1,269.25	1,300.98	1,333.51	1,366.85	1,401.02

Source: Actual Prices (SunWater, 2011am) and Recommended Prices (QCA, 2011).

6.9 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).

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APPENDIX A: FUTURE RENEWALS LIST

Below are listed SunWater's forecast renewal expenditure items greater than $10,000 in value, for the years 2011-12 to 2035-36 in 2010-11 dollar terms.

Asset	*Year*	*Description*	*Value ($'000)*
Copenhagen Bend Distribution	2019-20	Replace Air Vent 3600M	11
		Replace Air Vent 2350M	11
	2024-25	Replace Scour Outlet 8723.00M	13
		Replace Scour Outlet 166.54M	12
		Refurbish Scour Outlet - refurbish metalwork/valves - consider retiring asset	11
	2025-26	Refurbish Scour Outlet - refurbish metalwork/valves - consider retiring asset	56
	2034-35	Replace Structure, 150Mm Meter Outlet	45
		Replace Structure, 200Mm Meter Outlet	24
		Replace Structure, 80Mm Meter Outlet	19
		Replace Structure, 100Mm Meter Outlet	13
Copenhagen Bend Pump Station	2011-12	SDY: DESIGN OF COMMON CONTROLS	11
	2012-13	Refurbish pump and motor	56
		Electrical Component Upgrade - Documentation, Drawings, Specs and Cost Estimate(PLC, Switchboards, Cables)	56
	2013-14	Electrical Component Upgrade - Supply, Install, Commission (PLC, Switchboards, Cables)	170
		Refurbish pump and motor	57
	2015-16	Refurbish Bld - roof, paint, fittings etc	11
	2017-18	Refurbish pump and motor	57
	2018-19	Replace Switchboard, Low Voltage	270
		Refurbish pump and motor	56
	2019-20	Replace Cable	229
	2020-21	Replace Structure Of Building	135
	2022-23	Refurbish pump and motor	56
		Refurbish Bld - roof, paint, fittings etc	11
	2023-24	Refurbish pump and motor	56
		Refurbish Pit Covers - midlife based on condition	11
	2024-25	Change Out - screens as required replace or repair corroded screens	11
	2025-26	Replace Submersible Pump	242
	2027-28	Replace Discharge Valve And Actuator	78
		Refurbish pump and motor	56
	2028-29	Refurbish pump and motor	56
	2029-30	Refurbish Bld - roof, paint, fittings etc	11
	2030-31	Change Out - screens as required replace or repair corroded screens	11
	2032-33	Refurbish pump and motor	56
	2033-34	Refurbish pump and motor	56
		Refurbish switchboard	28
Lower Mary C2 Distribution	2025-26	Refurbish Scour Outlet - refurbish metalwork/valves - consider retiring asset	39
		Replace Air Valve 4.20M	13
	2034-35	Replace Structure, 100Mm Meter Outlet	36
Main Roads Distribution	2027-28	Refurbish Scour Outlet - refurbish metalwork/valves - consider retiring asset	61
		Replace Inlet Structure	27

Asset	*Year*	*Description*	*Value ($'000)*
		Replace Air Vent 2796.49M	13
		Replace Air Vent 2348.03M	13
		Replace Air Vent 1711.07M	13
		Replace Air Vent 97.05M	13
		Replace Air Vent 6400.55M	11
	2029-30	Refurbish Valve - dismantle buried assembly, externally wrap, remove bonnet in place, corrosion trea	27
Main Roads Pump Station	2013-14	Refurbish Pump - bearings, casing, wear rings etc	20
		Refurbish Motor - bearings, bake etc	11
	2014-15	Refurbish Pump - bearings, casing, wear rings etc	21
		Refurbish Motor - bearings, bake etc	11
	2016-17	Study: Review requirement for PLC and SCADA system	11
	2017-18	Documents, Drawings, Specs and Cost Estimate for PLC and SCADA system	34
		REFURBISH VACUUM PRIMING SYSTEM	32
	2018-19	Supply, Implement, Install, Commission PLC and SCADA system	113
		Refurbish Bld - roof, paint, fittings etc	17
	2022-23	REFURBISH VACUUM PRIMING SYSTEM	31
	2024-25	Replace Switchboard, Low Voltage	264
		Replace Cable	124
		Refurbish Bld - roof, paint, fittings etc	17
	2026-27	Replace Vacuum Priming System	29
		Refurbish Pump - bearings, casing, wear rings etc	20
		Refurbish Motor - bearings, bake etc	11
	2027-28	Replace Electric Motor	64
		REFURBISH VACUUM PRIMING SYSTEM	31
		Refurbish Pump - bearings, casing, wear rings etc	20
		Replace Discharge Valve	20
		Replace Reflux Valve	14
		Refurbish Motor - bearings, bake etc	11
	2028-29	Replace Pump	105
	2030-31	Refurbish Bld - roof, paint, fittings etc	17
	2032-33	REFURBISH VACUUM PRIMING SYSTEM	31
	2033-34	Replace Pump	104
Owanyilla Diversion Ch Distrib	2014-15	Refurbish Gate - seals, fixings, actuator as required	11
	2016-17	Maintain fence along open channel - OMC	11
	2025-26	Study: Develop O&M Manual Owanyilla	11
	2026-27	Maintain fence along open channel - OMC	11
	2030-31	Refurbish Gate - seals, fixings, actuator as required	11
	2033-34	Refurbish Scour Outlet - refurbish metalwork/valves - consider retiring asset	17
		Replace Air Vent 199.89M	13
		Replace Air Vent 461.97M	13
	2034-35	Replace Power Supply To 4 Pumps	32
		Replace Elect Reticulation To Inlt Str	14
Owanyilla Pump Station	2011-12	10MVA16 REFURBISH SCREENS - CORROSION	38
		10Y CRANE INSPECTION - as per AS2550	27
		Desilt suction chamber in front of pump inlet	22
	2017-18	10MVA16 REFURBISH SCREENS - CORROSION	39
	2019-20	Replace Dewatering Pump No1	18
		Replace Dewatering Pump No2	18

Asset	*Year*	*Description*	*Value ($'000)*
		Refurbish Road - repair flood damage	11
	2020-21	Refurbish Valve - corrosion, seals, bearings etc incl. Actuator as required	11
	2021-22	10Y CRANE INSPECTION - as per AS2550	28
		Desilt suction chamber in front of pump inlet	22
		Refurbish Zorcs - replace elements - need to check the cycle for replacement	11
	2023-24	Replace Cable	191
		09MVA07 REFURBISH CIRCUIT BREAKERS	125
		Replace Switchboard, Low Voltage	45
		10MVA16 REFURBISH SCREENS - CORROSION	39
	2024-25	Replace Switchboard, High Voltage	950
		Replace Fence	55
	2026-27	Replace Suction Valve	338
		Replace Discharge Valve	338
	2027-28	Refurbish Crane - mech, elec, corrosion on condition	11
	2029-30	10MVA16 REFURBISH SCREENS - CORROSION	39
	2031-32	10Y CRANE INSPECTION - as per AS2550	28
		Desilt suction chamber in front of pump inlet	22
	2033-34	Refurbish Road - repair flood damage	11
	2035-36	Replace Screen	73
		10MVA16 REFURBISH SCREENS - CORROSION	39
		Refurbish Ventilation System - screen, blower	17
		Refurbish Valve - corrosion, seals, bearings etc incl. Actuator as required	11
Walker Point Distribution	2011-12	Refurbishment of Walker Point Balancing Storage (refer project 10MVA12)	109
	2016-17	Refurbish Gate - remove, repaint, anodes & bearings, install. Completed in SLA in 03/4	17
	2017-18	Replace Fencing, Gates & Grids	257
		Refurbish Gate - remove, repaint, anodes & bearings, install	17
	2019-20	10MVA13 REFURB FENCE ALONG OPEN CHANNEL	13
	2025-26	Study:Develop O&M Manual	11
	2026-27	Refurbish Gate - remove, repaint, anodes & bearings, install. Completed in SLA in 03/4	17
	2027-28	Refurbish Scour Outlet - refurbish metalwork/valves - consider retiring asset	122
		Refurbish Pipework - refurbish or replace pipework, fixings and valves	28
		Refurbish Gate - remove, repaint, anodes & bearings, install	17
		Replace Air Vent 8650.70M	13
		Replace Air Vent 219.50M	13
		Replace Air Vent 13261.60M	13
		Replace Air Vent 1012.50M	13
		Replace Air Vent 7501.40M	13
		Replace Air Vent 10156.20M	13
		Replace Air Valve 14379.20M	13
		Replace Air Vent 10444.20M	13
		Replace Air Vent 13814.30M	13
		Replace Air Vent 10793.00M	13
		Replace Air Vent 658.70M	13
		Replace Air Vent 11878.80M	13
		Replace Air Vent 8150.50M	13
		Replace Air Vent 9595.00M	13
		Replace Air Vent 9248.50M	13
		Replace Air Vent 9810.90M	13

Asset	*Year*	*Description*	*Value ($'000)*
		Replace Air Vent 12868.80M	13
		Replace Air Vent 12175.10M	13
		Replace Air Vent 12081.30M	13
		Replace Air Valve 1557.00M	12
		Replace Air Valve 2663.10M	12
		Replace Air Valve 1976.30M	12
		Replace Air Valve 3090.40M	12
		Replace Air Valve 12519.90M	12
		Replace Air Valve 3579.80M	12
		Replace Air Valve 1787.00M	12
		Replace Air Vent 449.6Om	11
		Replace Air Vent 14651.20M	11
		Replace Air Vent 1.80M	11
		Replace Air Vent 15786.20M	11
		Replace Air Vent 14783.10M	11
		Replace Air Vent 148.9Om	11
		Replace Air Vent 15162.30M	11
		Replace Air Vent 15335.80M	11
		Replace Air Vent 15961.80M	11
	2029-30	10MVA13 REFURB FENCE ALONG OPEN CHANNEL	13
	2030-31	10MVA13 REFURBISH FENCING	15
	2034-35	Replace 3 Phase Elect Ret-Outlet Gate	27
Walker Point Pump Station	2011-12	Electrical Component Upgrade - Assess, Design Replace PLC, Switchboards, Cables	55
	2012-13	Electrical Component Upgrade - Documentation, Drawings, Specs and Cost Estimate(PLC, Switchboards, Cables)	56
	2013-14	Electrical Component Upgrade - Supply, Install, Commission (PLC, Switchboards, Cables)	170
	2014-15	Refurbish Units - incl. Motors, seals, etc	34
	2017-18	Refurbish Building - roof, fixtures, fittings, electrical installation as required	11
	2019-20	Refurbish Units - incl. Motors, seals, etc	67
	2022-23	Replace Cable	978
		Replace Switchboard, Low Voltage	220
	2023-24	Refurbish Building - roof, fixtures, fittings, electrical installation as required	11
	2024-25	Replace Hdpe Suction Line	87
		Refurbish Units - incl. Motors, seals, etc	67
	2027-28	Replace Reflux Valve	35
		Replace Discharge Valve	23
	2029-30	Refurbish Units - incl. Motors, seals, etc	67
		Refurbish Building - roof, fixtures, fittings, electrical installation as required	11
	2030-31	Replace Pump	144
	2031-32	Replace Discharge Valve	23
	2032-33	Replace Pump	144
	2034-35	Refurbish Units - incl. Motors, seals, etc	67
		Refurbish Valve - corrosion, seal, bearings	11
	2035-36	Refurbish Building - roof, fixtures, fittings, electrical installation as required	11