QUEENSLAND COMPETITION AUTHORITY

Draft Report

SunWater
Irrigation Price Review: 2012-17

Volume 2

Upper Condamine
Water Supply Scheme

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.

TABLE OF CONTENTS

GLOSSARY

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

EXECUTIVE SUMMARY

Direction Notice

The Authority has been directed by the Minister for Finance and The Arts and the 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 Upper Condamine WSS for the 2012-17 regulatory period are outlined in Table 1 together with actual prices since 1 July 2006.

Table 1: Prices for the Upper Condamine WSS ($/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*
River – North Branch											
Fixed (Part A)	25.24	27.56	30.56	32.04	33.00	34.20	38.51	39.48	40.46	41.48	42.51
Volumetric (Part B)	16.64	18.18	20.16	21.13	21.78	22.56	8.55	8.77	8.99	9.21	9.44
River – North Branch Risk A											
Fixed (Part A)	0.00	0.00	0.00	0.00	0.00	0.00	6.90	9.12	11.45	11.79	12.09
Volumetric (Part B)	19.16	22.36	23.76	24.51	25.26	26.16	8.55	8.77	8.99	9.21	9.44
River – Sandy Creek/Condamine											
Fixed (Part A)	18.84	19.40	20.32	20.96	21.60	22.36	26.13	26.78	27.45	28.14	28.84
Volumetric (Part B)	14.41	14.83	15.54	16.03	16.51	17.11	4.64	4.76	4.88	5.00	5.13

Source: Actual Prices (SunWater, 2011al) 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.

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. UPPER CONDAMINE WATER SUPPLY SCHEME

1.1 Scheme Description

The Upper Condamine water supply scheme (WSS) is located within the flood plains of the Darling Downs, with supplies from Leslie Dam near the town of Warwick. An overview of the key characteristics of this WSS is provided in Table 1.1.

Table 1.1: Key Scheme Information for the Upper Condamine WSS

	Upper Condamine WSS
Business Centre	Toowoomba
Irrigation Uses of Water	Cotton, sorghum, maize, soybean, sunflower, barley, oats, wheat, canary and lucerne
Urban Water Supplies	The towns of Warwick and Cecil Plains

Source: Synergies Economic Consulting (2010).

The Upper Condamine WSS has a total of 100 bulk customers. Medium and high priority water access entitlements (WAE) as well as other entitlement holders, are outlined in Table 1.2.

Table 1.2: Water Access Entitlements

Customer Group	***Irrigation WAE (ML)***	***Total WAE (ML)***
North Branch – Risk A[1]	7,320	7,320
Risk B[2]	925	925
Medium Priority	22,118	22,165
High Priority	0	3,387
Total	**30,363**	**33,797**

Source: SunWater (2011).

1.2 Bulk Water Infrastructure

Bulk water service involves the management of storages and WAEs in accordance with regulatory requirements, and the delivery of water to customers in accordance with their WAE.

The full supply storage capacity and age of the key infrastructure are detailed in Table 1.3.

[1] SunWater submit that North Branch – Risk A WAE has a lower priority than medium priority as it has similar characteristics to water harvesting as opposed to the provision of supplemented supply. Entitlement holders of North Branch – Risk A are all irrigation customers.

[2] SunWater submit that Risk B WAE are located in the upper sections of the Upper Condamine WSS immediately downstream of Leslie Dam. Risk B is a lower priority than medium priority as it can only be accessed when the capacity of Leslie Dam reaches a particular volume. As Risk B WAE is not referred to in SunWater's Upper Condamine NSP, pricing associated with this tariff group is beyond the scope of the Authority's review.

Table 1.3: Bulk Water Infrastructure in the Upper Condamine WSS

Storage Infrastructure	*Capacity (ML)*	*Age (years)*
Leslie Dam	106,300	46
Cecil Plains Weir	700	64
Talgai Weir	640	30
Yarramalong Weir	390	22
Wando Weir	310	31
Lemon Tree Weir	300	32
Melrose Weir	160[a]	33
Nangwee Weir	80	17

Note: [a] capacity is now reduced due to silting. Source: SunWater (2011).

The characteristics of the bulk water assets are:

(a) Leslie Dam is a mass concrete gravity dam. It was constructed in two stages, with the second stage doubling the storage capacity of the dam in 1986;

(b) Cecil Plains Weir is an all-concrete weir with a centre spillway. It marks the downstream limit of the Upper Condamine WSS;

(c) Talgai Weir is a concrete faced earth-fill structure designed to minimise afflux during river flows;

(d) Yarramalong Weir's outlet passes through the Yarramalong Pump Station located about 40 metres upstream of the weir. The pump station is remotely controlled from the Pittsworth Depot. The Yarramalong pump station and pipeline supplements WAE on the North Branch part of the scheme;

(e) Wando Weir is a rock-fill structure built in 1980;

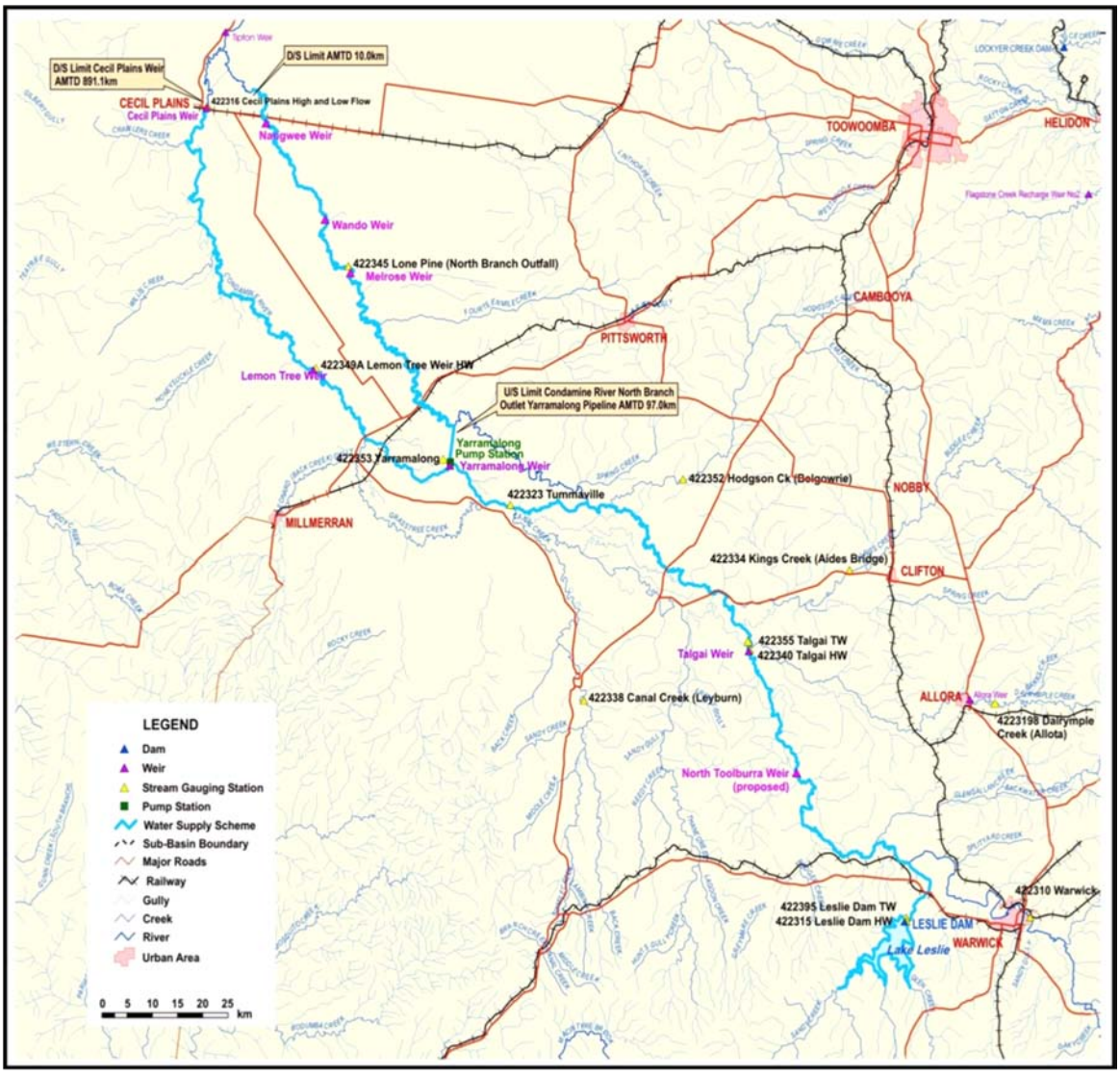
(f) Lemon Tree Weir is a concrete faced earth-fill wall designed to minimise afflux (an increase in upstream water levels) during river flows. Lemon Tree Weir storage doubles as a pumping pool for the Condamine Plains Water Board. The Board is licensed to divert natural stream flows into its nearby off-stream storage from where it progressively releases into the Lemon Tree Weir pond for pumping to customers;

(g) Melrose Weir is a grassed earthen construction with a small curved concrete spillway. It was built in 1978 with an original design capacity of 160 ML. However, capacity has been reduced due to silting. Damage to the weir occurs during overtopping events; and

(h) Nangwee Weir is a small concrete faced earthfill embankment and doubles as a road crossing (SunWater, 2011)

The location of the Upper Condamine WSS and key infrastructure is shown in Figure 1.1.

Figure 1.1: Upper Condamine WSS Locality Map



Source: SunWater (2011).

1.3 Network Service Plans

The Upper Condamine WSS network services 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, dam safety upgrades, 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.

2. REGULATORY FRAMEWORK

2.1 Introduction

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

During the negotiations that preceded the 2006-11 price path, the Upper Condamine WSS Tier 2 group 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 Upper Condamine WSS:

(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;

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

(d) federal requirements to change asset configuration or operations or changes to available water supplies through Murray-Darling Basin sustainable diversion limits;

(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; and

(g) outbreak of noxious weeds.

Other Stakeholders

Central Downs Irrigators Limited (2010) submitted that the economic impact of the price path review needs to be considered in light of the following:

(a) Condamine alluvium groundwater planning process potentially reducing allocations by more than 50%;

(b) Murray-Darling Basin Plan reductions of river water diversions; and

(c) drought leading to only very limited take of overland flow.

The participants of the Round 2 consultation commented that although some irrigators consider the service provided by SunWater to be good, irrigators incur costs even when no water is provided.

The participants of the Round 1 and Round 2 (April 2011) consultation identified that as the scheme provides poor water reliability. The participants of the Round 2 consultation expressed general support for a price cap but had concern that scheme unreliability means that irrigators can only ever use about 50% of nominal entitlements. Irrigators are concerned that lack of reliability means that irrigators will have limited opportunity to adjust to cope with price impacts.

Cotton Australia/Queensland Farmers' Federation (QFF) (2011a) questioned SunWater's statement that customers demand is a risk that cannot be managed by SunWater. Cotton Australia/QFF further submitted that they agree that SunWater cannot be expected to take on all the risk of demand in any one year, but to suggest that SunWater has no role in the demand risk into the future is frustrating to say the least. Cotton Australia/QFF suggested that managing demand may be best addressed by setting prices based on 20% higher usage than historical averages.

The participants of the Round 1 consultation (May 2010) queried as to whether the form of regulation will be the same across schemes or whether it will vary between schemes depending on circumstances.

2.3 Authority's Analysis

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.

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 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: SunWater (2011).

Consistent with the Authority's allocation of risks (Table 2.1), it is proposed that risks identified by SunWater in items (a), (b), (c) and (g) above will be dealt with an end-of-period adjustment, or price trigger or cost pass through upon application by SunWater or customers.

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.

In response to SunWater's submission item (d) and Central Downs Irrigators Limited's submission (items (a) and (b)), the Authority considers that Government imposts should be borne by customers and that cost variations may be immediately transferred to customers using a cost pass-through mechanism, depending on materiality. The Authority notes that the Murray-Darling Basin Authority is required to develop a draft Basin Plan due for consideration by the Commonwealth Minister for Water and Federal Parliament in early 2012, with potential implications for the Upper Condamine WSS.

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

In response to stakeholder submissions relating to poor water availability and drought, the Authority considers that SunWater cannot influence water availability in that it cannot influence rainfall or hydrology. The standard supply contract between SunWater and its customers

requires SunWater to only supply water to customers to satisfy customer requirements when there is a sufficient level of water availability. Therefore, the standard water supply contract attributes supply risk to WAE holders.

SunWater's customers have some, albeit limited, scope to manage supply risks. Users of irrigated water can manage their water supply risks by holding surplus entitlements with SunWater, sourcing alternative supplies and using temporary trade markets.

In response to Cotton Australia/QFF, the Authority considers that SunWater is not able to manage demand risk as SunWater is not able to decrease its asset base or reduce all of its costs in response to a forecast or actual decrease in demand. SunWater must therefore incur certain (fixed) expenses to maintain full service capability irrespective of demand.

The Authority notes Cotton Australia/QFF's proposed method to address demand risk. This proposal allocates some volume risk to SunWater, which SunWater is not able to manage. Rather than estimating future demand the Authority recommends that short term volume risks should be assigned to customers through a tariff structure that recovers all fixed costs through fixed charges and variable costs through the volumetric charges.

Short term supply and demand risks therefore need to be managed, and their cost borne, by customers.

In response to round 1 consultation stakeholders' comment regarding whether the form of regulation may vary between schemes, the Authority recommends that a price cap apply in each scheme. The nature of the risks applying to SunWater do not vary materially between schemes.

In response to participants at the Round 2 consultation, who considered calculating the tariffs over a five-year period may be too short to manage volume risk in the scheme, as stipulated in the Ministerial Direction, the Authority is required to recommend irrigation prices to apply for the five-year regulatory period, 2012-17. The major source of 'lumpiness' arises from the renewals expenditures for which a rolling annuity has been adopted over a 20-year planning period (see Volume 1).

3. PRICING FRAMEWORK

3.1 Tariff Structure

Introduction

During the 2005-06 price negotiations, it was generally agreed to adopt a 70:30 ratio of fixed costs to variable costs. However, due to the prevailing Government policy that there should be no real price decreases, the Part A fixed charge for the Sandy Creek or Condamine River tariff group was set at 67% and Part B variable charges at 33% of revenue.

The Part A fixed charge for the North Branch was set at 70% and Part B variable charge at 30% of revenue. The North Branch – Risk A was based on a 100% Part B charge (SunWater, 2006b).

Stakeholder Submissions

SunWater

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

Other Stakeholders

The participants of the Round 1 and 2 consultation considered that irrigators should not be required to pay for water that is not available through the fixed Part A charge.

The participants of the Round 2 consultation raised concerns about the impact of a high Part A tariff given the (relatively) low reliability of the scheme and the impediments irrigators experience in making adjustments. The participants considered that a high Part A will drive a 'use-it-or-lose-it' approach.

Cotton Australia/QFF (2011a) submitted that if SunWater charges for 100% of WAE regardless of use (and thus removes all references to storage rental fees), the value of spending money on water use efficiency will be put into question where carry-over or continuous accounting is not in place. Cotton Australia/QFF suggested that SunWater should therefore review all scheme rules for the prospect of carryover or continuous accounting and that if SunWater charges for 100% of bulk WAE it should be charged in arrears not in advance as is currently the case.

Central Downs Irrigators Limited (2010) and participants at Round 1 consultation, identified that irrigators have invested in on-farm storages to access water supplied under 'Stream Flow Period' provisions (formerly credit water) when this water it is made available. Since irrigators incur the evaporation losses from their own storages they considered that 'Stream Flow Period' water should fall into a separate pricing category.

Irrigators considered that if a two-part tariff is to be applied to manage volume risk, then given the volatility associated with supply in this scheme, calculating the tariffs over a five-year period may be too short. The participants considered that historically this scheme has had instances of low supply of up to 10 years.

The participants at the Round 2 consultation also considered that the announced allocation system does not facilitate an efficient outcome, particularly given in many years there is no supply. They also suggested that there is an inability to implement water ordering systems due to limits of water resource planning.

Central Downs Irrigators Limited (2010) submitted that distribution rules for allocations in storage have major impacts on the value of water to irrigators and therefore need to be addressed as part of this review. They submitted that more flexible supply arrangements (capacity share versus water year accounting) help irrigation water to be used at the most profitable time and on the most profitable crops.

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.

In response to Round 2 consultation participants' submissions regarding efficiency, it is noted that the Authority's cost-reflective two-part tariff promotes efficiency as:

(a) the volumetric charge is set to equal the anticipated costs of using an additional unit of water (the marginal cost), as this informs decisions by users. That is, the cost of supplying the additional unit of water is clear and customers can establish whether the benefit of using it exceeds its cost (PricewaterhouseCoopers (PwC), 2010a). Increasing the volumetric charge beyond its marginal cost will mean less water is used than available for consumptive purposes and farm output would be reduced;

(b) the tariff structure signals the full fixed costs of holding WAE and provides an incentive for customers to reduce their WAEs, if they currently hold more than is necessary. This incentive also applied to SunWater where it holds WAEs (other than where held for distribution losses);

(c) in respect of setting tariffs to meet environmental objectives, the Authority notes that the institutional arrangements in Queensland administered by DERM establish the quantum, and allocation of water, between environmental and consumptive use. The Authority has been required to establish prices to recover SunWater's efficient business costs – to seek to achieve other broader goals would require a clear specification of those goals to enable the Authority to respond with relevant pricing recommendations.

    Setting prices of delivered water at its true cost will also allow irrigators to make appropriate decisions about the need for, and nature of, any further on-farm initiatives to improve water use efficiency (which will in turn ensure that total farm costs, including associated environmental costs, are minimised over the longer term). The water planning framework needs to take into account and adjust allocations for consumptive purposes if the broader effects of current allocations for consumption are considered inappropriate; and

(d) where a volumetric charge is relatively low (or zero) and, as a result, fixed costs are high, then there are incentives for customers to utilise all of an announced allocation. However, the appropriate degree of utilisation of capacity allocated for consumption can only be determined by irrigators (and other customers) in the light of market conditions for their products, in the knowledge of the cost of water delivered (including on-farm costs) and the understanding of the impact of changed water consumption on their farms.

Additionally, with trading available in the scheme, irrigators have an incentive to conserve water and invest in water use efficiency infrastructure where there is a more valued use of that water.

In response to customer consultation comments that fixed charges should not apply when water is not available, 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).

In regard to carry-over or continuous accounting issue raised by Cotton Australia/QFF to address concerns about water efficiency, the Authority notes that these arrangements do not apply in this scheme. Nonetheless, the Authority is not aware of anything in the proposed tariff structure which would, in principle, detract from their effective implementation.

Moreover, the Authority also recognises that tariff structure 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 Upper Condamine 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 water traded	0	0	0	0	0	0	0	25
Temporary water traded	2,845	0	1,925	1,925	1,875	5,445	0	0

Source: SunWater Annual Reports (2003 - 2010) and Queensland Valuation Services (2010).

The Authority further notes that if SunWater charges for 100% bulk WAE in arrears rather than in advance, the additional financing costs through increased working capital will need to be included in prices. Therefore, the Authority proposes to retain the existing arrangements of charging Part A in advance. The Authority also notes SunWater's advice that this is a requirement of current standard (deemed) service contracts.

The Authority's analysis of whether service delivery costs are fixed or variable is addressed in a subsequent chapter as is cost allocation.

In response to the proposal that Stream Flow Period water should constitute a separate pricing category (as proposed by Central Downs Irrigators Limited and participants at Round 1 consultation), the Authority notes that under the Ministerial Direction the Authority is required to adopt the tariff groups nominated by SunWater.

In response to irrigators' comments regarding volume risk, the Authority recommended in Chapter 2, that short term volume risk be borne by customers through cost-reflective tariffs. Further, the Ministerial Direction requires that the Authority recommend prices for five years.

In response to Round 2 consultation where participants commented that the announced allocation system does not facilitate an efficient outcome particularly in those years of limited supply, the Authority notes the constraints of the Condamine Balonne ROP and the requirements of the Ministerial Direction.

SunWater has conducted a preliminary investigation into the possibility of replacing the announced allocation approach with the continuous sharing approach. SunWater found significant technical issues would need to be resolved and broad customer support secured prior to further investigation. If these conditions were met at some time in the future, then an application could be made to DERM to amend the water sharing rules in the corresponding ROP.

In Volume 1, the Authority noted the requirement to adopt SunWater's existing tariff groups and to align the volumetric charge with variable costs and the fixed charge with fixed costs.

The Authority notes, not only the nature of variable and fixed costs associated with administering the Upper Condamine WSS (see Chapter 6), but also that some costs will be incurred regardless of the volume of water being made available. 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 considers that a cost-reflective tariff structure will provide an efficient price signal and will facilitate efficient water use. However, implementation of an alternative to the announced allocation method is beyond the scope of the Authority's review.

In response to Round 2 consultation where participants commented that there is an inability to implement water ordering systems due to limits of water resource planning, the Authority notes the responses of DERM and SunWater.

The Authority notes that irrigators are required to provide notice to SunWater prior to taking delivery of water (from four, eight, 17 or 18 days depending on which particular zones). The Authority also notes the method of contacting SunWater is via telephone or facsimile as opposed to the internet which is the preferred method for other schemes.

Specifically, DERM has commented that the Condamine Balonne ROP provides no limitation for alternative water ordering systems to be put in place. SunWater has commented that alternative water ordering (such as via internet) is achievable should irrigators required this.

The Authority notes that an advantage to existing arrangements is that irrigators make personal contact with SunWater staff that can provide a range of information of relevant to the irrigator regarding the scheme. The Authority concludes that the Condamine Balonne ROP provides no limitations for alternative water ordering systems to be adopted and considers that irrigators, through the existing Irrigator Advisory Committee, is best placed to progress this issue with SunWater.

3.2 Water Use Forecasts

Introduction

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

In the previous 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, impacts of trading and scheme specific issues (SunWater, 2006a).

For the Upper Condamine WSS, SunWater (2006b) assumed a water usage forecast of 65% of WAE. Water usage for high and medium priority irrigation WAE was 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 ROP.

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

SunWater's usage forecasts for 2012-17 are made with regard to historic averages over an eight-year period and the usage forecast applied for the 2006-11 price path. However, SunWater advised that usage of high priority and medium priority irrigation water cannot be separately identified, as holders of high priority WAE also hold medium priority WAE which passes through the same meter.

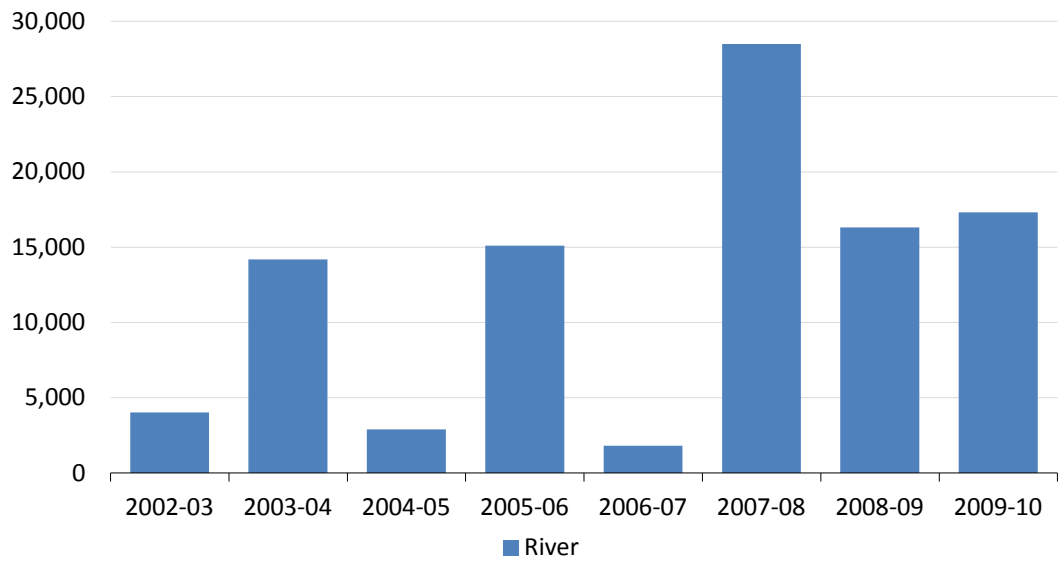
Based on the last eight years observations, SunWater has forecast use as follows:

(a) at a whole scheme level (all sectors) – an average of 37% of total WAE (including SunWater's WAE); and

(b) for the irrigation sector only – an average of 45% of irrigation WAE. This compares with the use assumption adopted in the 2006-11 price paths of 65% of WAE.

Figure 3.1 shows the historic usage information for the Upper Condamine WSS submitted by SunWater (2011). The river category includes all irrigation and other usage sourced from the river.

Figure 3.1: Water Usage for the Upper Condamine WSS (ML)



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 that water use forecasts are relevant to establishing cost-reflective prices for SunWater.

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).

3.3 Tariff Groups

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

The 2006-11 SunWater Irrigation Price Paths Final Report (SunWater, 2006b) nominated three tariff groups for the Upper Condamine WSS:

(a) River – North Branch Risk A[3];

(b) River – North Branch; and

(c) River – Sandy Creek/Condamine River.

SunWater proposed in its NSP that the current bulk tariff groups continue.

In accordance with the Ministerial Direction, the Authority will adopt the proposed tariff groups for this WSS.

[3] SunWater submit that Risk A is a lower priority than medium priority as it has similar characteristics to water harvesting as opposed to the provision of supplemented supply. For this particular tariff group, SunWater consider that they only need to recover pumping costs.

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 service 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).

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) an assessment of the prudency and efficiency prudency of renewals expenditure incurred during the previous price path (i.e. 2006-11);

  (ii) 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 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, 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.

SunWater submitted that the opening balance for the Upper Condamine WSS was negative $31,000.

In Volume 1, the Authority noted that the opening ARR balance at 1 July 2006 is not subject to review for the 2012-17 regulatory period.

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 path. The Authority has also sought to compare the original expenditure forecasts underlying the 2006-11 price path with actual expenditure, to establish the accuracy of SunWater's forecasts for 2006-11.

Submissions

SunWater

SunWater (2011) submitted actual renewals expenditure for the Upper Condamine WSS for 2006-11 (Table 4.1) in real terms as at 2010-11. This expenditure included indirect and overhead costs which are subject to a separate review by the Authority (see Chapter 5). SunWater advised that it was unable to provide the forecast renewals expenditure (approved for the 2005-06 review) for this period.

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

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*
Direct Costs	404	364	92	172	386
Indirect and over head costs	102	96	55	94	117

Source: SunWater (2011an).

Other Stakeholders

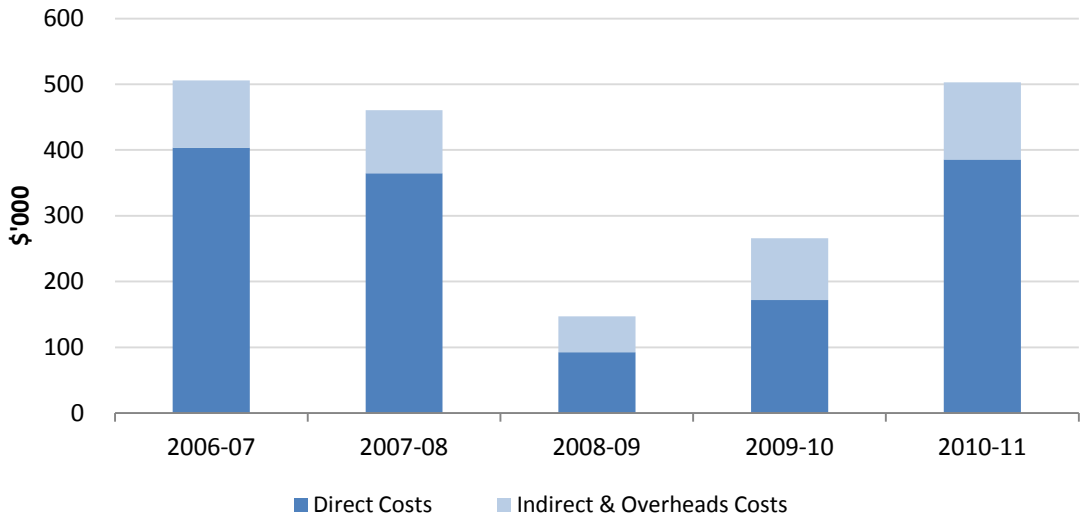
The participants at the Round 2 consultation raised concerns about growing deficits associated with ARR balances. They considered that past expenditures need to be checked for prudency and efficiency.

Authority's Analysis

Total Renewals Expenditure

The direct 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)



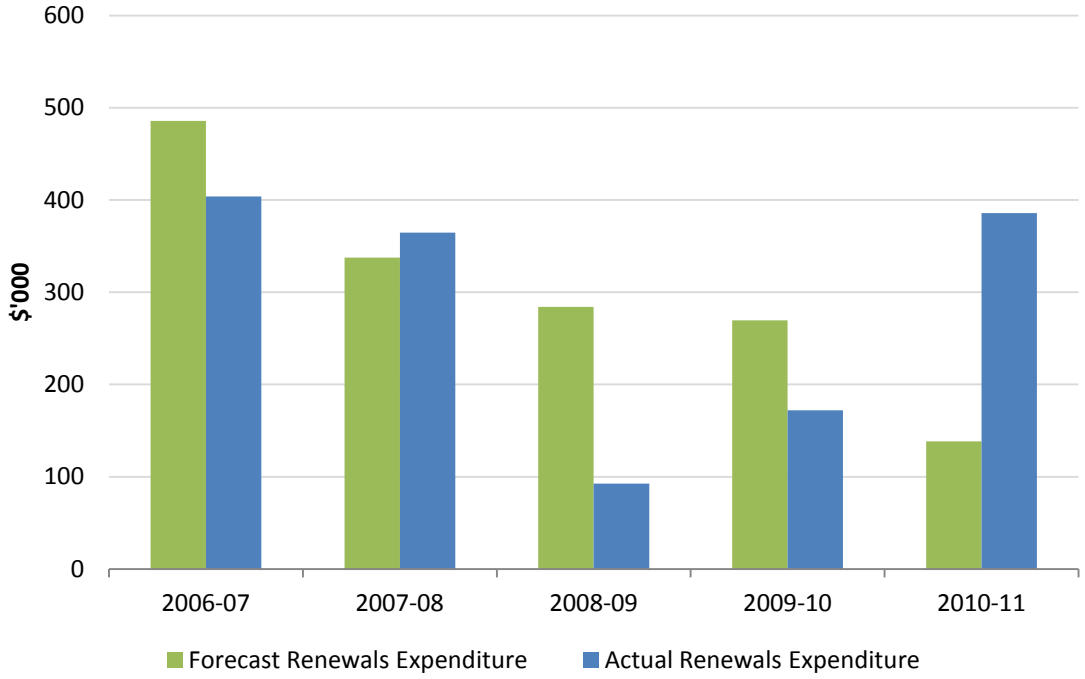
Source: Forecast Indec (2011), Actual SunWater (2011k).

Comparison of Forecast and Actual Costs

The Authority was able to source details of 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 Upper Condamine WSS for 2006-11 is shown in Figure 4.2.

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



Source: Forecast Indec (2011), Actual SunWater (2011k).

Actual renewals expenditure was $97,318 less than forecast over the period.

GHD was appointed to review the prudency and efficiency of past renewals projects.

In the absence of forecast renewals expenditure for 2006-11 from SunWater (as noted above), GHD sought to identify variances between annually budgeted and actual expenditure for certain projects. The budgeted and actual expenditures both included indirect costs and overheads costs.

GHD reviewed the prudency and efficiency of the total costs (including indirect and overhead costs) of a sample of items. As noted in Volume 1, GHD adopted a different approach to the other scheme consultants and undertook a high level process review of a large number of projects rather than a more detailed review of a smaller number of projects.

GHD found SunWater's asset planning process to generally meet good industry practice (as did the other consultants in general). Nevertheless, as a result of the lack of detailed review of any specific renewals expenditure items, the Authority has applied a general 10% cost saving to SunWater's proposed renewals expenditure items reviewed by GHD.

The following projects, completed between 2006-07 and 2010-11, were reviewed in Systems, Applications and Products (SAP) Plant Maintenance (PM) and Works Management System (WMS) and assessed as prudent and efficient by GHD, based on the information provided by SunWater and GHD's analysis using engineering experience and judgement. These projects were (costs include indirect and overheads):

(a) 2006-07 – Leslie Dam – Painting of the conduits ($73,537);

(b) 2006-07 – Leslie Dam – Replacement of the right hand guard valve ($128,916);

(c) 2006-07 – Yarramalong Pump Station – Overhaul the Control System ($66,640);

(d) 2006-08 – Leslie Dam – Replacement of the left hand guard valve ($137,716); and

(e) 2009-10 – Yarramalong Pump Station – Refurbish a pump and motor ($61,516).

According to GHD, all of the projects had condition and risk assessments supporting the need for each project. The replacement of the Leslie Dam guard valve also had a good project description that allowed GHD to gain a sound understanding of the project scope and to verify the cost elements in the project cost summary.

As noted above, the Authority has applied a 10% saving to these items.

Conclusion

As noted in Volume 1, the Authority has applied a 10% saving to sampled and non-sampled items for which there was insufficient information and items reviewed by GHD.

In total, the Authority recommends that past renewals expenditure be adjusted as outlined in Table 4.2.

Table 4.2: Review of Past Renewals Expenditure 2006-11 (Real $)

Item	***Date***	***SunWater***	***Authority's Findings***	***Recommended***
Past Renewals Items	various	various	Insufficient Information	10% saving applied

Source: SunWater (2011), GHD (2011) and SKM (2011).

4.4 Opening ARR Balance (at 1 July 2012)

Stakeholder Submissions

SunWater

SunWater indicated that the renewals opening ARR balance for 1 July 2011 was negative $1,193,000 for the Upper Condamine WSS. This estimate reflects the most recent information provided by SunWater to the Authority in September 2011 and may differ from the NSP.

Other Stakeholders

Cotton Australia (2011) submitted that large negative renewals can come about by incorrect use of the renewals annuity or insufficient funds set aside. They considered that if the price paths had been structured correctly these schemes would not have been paying a rate of return but a larger amount to renewals, ensuring there is no negative balance.

Authority's Analysis

Based on the Authority's assessment of the prudency and efficiency of past renewals expenditure, the recommended opening ARR balance for 1 July 2011 for Upper Condamine WSS is negative $1,092,000.

The Authority calculated the opening ARR balance at 1 July 2011 by using nominal values:

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

(b) adding 2006-2011 renewals annuity revenue;

(c) subtracting 2006-2011 renewals expenditure; and

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

To establish the closing balance ARR balance as at 30 June 2012 of negative $1,170,000, 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 stakeholder comments, the Authority notes that SunWater can have a negative balance where prudent and efficient renewals expenditure outweighs the revenue from the annuity in a particular pricing period. SunWater has a responsibility to maintain the service potential of the scheme. A negative balance can also arise from higher than anticipated expenditure.

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 projects expected to occur over the Authority's recommended planning period, with a material project being defined as one which accounts for 5% 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 projects expected to occur within the first five years of each planning period.

In Volume 1, the Authority also reviewed and accepted a planning period of 20 years.

Prudency and Efficiency of Forecast Renewals Expenditure

Submissions

SunWater

SunWater's proposed renewals expenditure for the Upper Condamine WSS is presented in Table 4.3 as provided in its NSP (submitted prior to the Government's announced interim prices for 2011-12). The major items included in these estimates are:

(a) Leslie Dam – repair pitting and corrosion to conduit lining at an estimated cost of $119,000 in 2011-12. Based on condition assessment, corrosion damage to the conduit lining will be repaired;

(b) Yarramalong Pump Station – refurbish pump No. 3 and upgrade control system at an estimated cost of $111,000 in 2011-12;

(c) Leslie Dam – replace 685 mm diameter valve at an estimated cost of $119,000 in 2014-15;

(d) Leslie Dam – refurbish spillway gates at an estimated cost of $156,000 in 2015-16. The need for this work has been established by condition assessment;

(e) Leslie Dam – replace water treatment plant at an estimated cost of $175,000 in 2015-16; and.

(f) Yarramalong Pump Station – refurbish pump No. 2 at an estimated cost of $134,000 in 2015-16.

Table 4.3: Forecast Renewals Expenditures for 2012-16 (Real $'000)

	2011-12	***2012-13***	***2013-14***	***2014-15***	***2015-16***
Lemon Tree Weir	24	-	-	-	6
Leslie Dam	385	260	303	331	464
Leslie Dam WTP	-	-	-	-	19
Melrose Weir	-	-	-	9	-
Nangwee Weir	21	-	-	-	-
Talgai Weir	-	-	-	6	-
Yarramalong Pump Station	118	-	42	33	165
Yarramalong Rising Main	12	-	-	-	-
Yarramalong Weir	-	-	64	-	-
Total	**560**	**260**	**410**	**378**	**654**

Source: SunWater NSP (2010).

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.**

The major expenditure items from 2016-17 are:

(a) replacement of cableways at Leslie Dam at an estimated cost of $1,704,000 in 2018-19; and

(b) replacement of pump, motors and pump column at Yarramalong Pump Station at an estimated cost of $987,000 in 2029-30.

Other Stakeholders

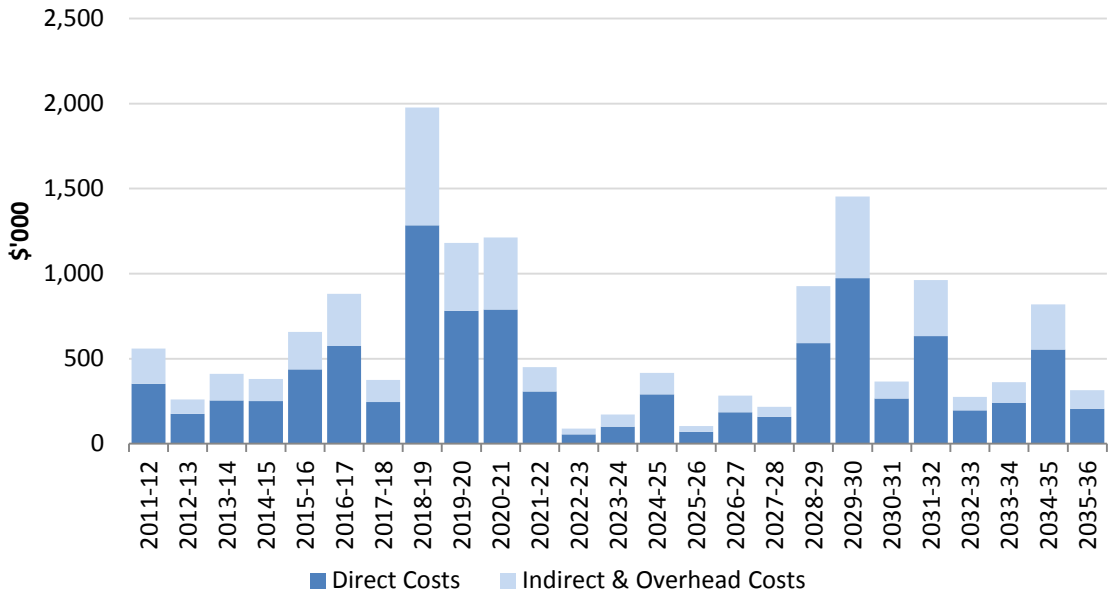
The participants at the Round 2 consultation considered that the GHD report lacks analysis of efficient renewals costs and is unacceptable as a basis for the Authority to assess efficient prices.

Authority's Analysis

Total Costs

SunWater's proposed renewals expenditure for 2011-36 for the Upper Condamine WSS 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 review below. The indirect and overheads component of expenditure relating to these projects are reviewed in Chapter 5.

Figure 4.3: Forecast Renewals Expenditure 2011-36



Source: SunWater (2011).

Item Reviews

As for past renewals expenditure, GHD and SKM have reviewed the prudency and efficiency of a sample of items.

As noted above, GHD adopted a different approach to the other scheme consultants and undertook a high level process review of a large number of projects rather than a more detailed review of a smaller number of projects.

GHD found SunWater's asset planning process to generally meet good industry practice (as did the other consultants in general). Nevertheless, as a result of the lack of detailed review of any specific renewals expenditure items, the Authority has applied a general 10% cost saving to SunWater's proposed renewals expenditure items reviewed by GHD.

Item 1: Leslie Dam 2012-2016

SunWater

SunWater proposed the following renewal projects for the Leslie Dam over 2011-12 to 2015-16 (Table 4.4).

Table 4.4: Leslie Dam 2011-12 to 2015-16

Description	*Driver*	*Cost Estimate ($'000)*				
		2011-12	*2012-13*	*2013-14*	*2014-15*	*2015-16*
5 Yearly Dam Safety Inspection	Compliance	-	-	52	-	-
Refurbish: Paint upstream face	Condition	-	65	-	-	-
Refurbish: Foundation Drains	Condition	-	-	-	51	-
Install Anchored Buoys	Safety	46	-	-	-	-
Refurbish: Paint Upstream Face	Condition	-	53	-	-	-
Refurbish Unlined 685mm M/S Pipe	Condition	-	-	56	-	-
Investigation Contaminated Land Sites	Compliance	56	-	-	-	-
Paint downstream face of gate	Condition	-	-	-	-	75
Refurbish: Paint upstream face	Condition	63	-	67	-	-
Repaint downstream face of gate	Condition	-	-	-	75	75
Repair pitting and corrosion of conduit lining	Condition	119	-	-	-	-
Replace Valve, 685Mm Gate John	Condition	-	-	-	119	-
Replace Water Treatment	Condition	-	-	-	-	175

Note: Costs include indirect and overhead costs. Source: GHD (2011).

Other Stakeholders

No other stakeholders have commented on these items.

Consultant's Review

GHD noted that most of the projects planned on Leslie Dam over this period are planned maintenance projects completed to restore or preserve the assets. The projects were supported by condition assessment reports or the defined frequency predicted by aging materials.

GHD suggested that all of these projects are needed to preserve the assets. Installing buoy lines, dam safety inspections and investigation of contaminated lands are required to comply with SunWater's legislative and statutory obligations.

GHD considered all that the drivers for these projects were sound (i.e. in response to SunWater's legislative obligations), and the timing and cost of the works appears to be prudent. Accordingly, GHD assessed this proposed expenditure as valid and prudent.

Authority's Analysis

As noted above, the Authority has applied a 10% saving to items reviewed by GHD. The Authority commissioned more detailed advice from SKM on a particular future renewals project (see further below).

Item 2: Yarramalong Pump Station 2011-12 to 2015-16

SunWater

SunWater proposed the following renewals projects for the Yarramalong Pump Station over 2012-16 (Table 4.5).

Table 4.5: Yarramalong Pump Station 2011-12 to 2015-16

Facility	*Description*	*Driver*	*Cost Estimate ($'000)*				
			2011-12	*2012-13*	*2013-14*	*2014-15*	*2015-16*
Yarramalong Pump Station	Refurbish Pump and Motor	Condition	-	-	-	-	78
	Refurbish: Pump No 2	Condition	-	-	-	-	56
	Refurbish: Pump No 3	Condition	53	-	-	-	-

Note: Costs include indirect and overhead costs. Source: GHD (2011).

Other Stakeholders

No other stakeholders have commented on these items.

Consultant's Review

GHD noted that refurbishment of the pump and motors at Yarramalong was based on the age of the pumps and the last time they were refurbished. The Pump 3 had a recent condition assessment to support the timing of the project.

GHD considered all that the drivers for these projects were sound and the timing and cost of the works appears to be prudent. Accordingly, GHD assessed this proposed expenditure as valid and prudent.

Authority's Analysis

As noted above, the Authority has applied a 10% saving to items reviewed by GHD.

Item 3: Yarramalong Weir 2012-2016

SunWater proposed the following renewals project for the Yarramalong Weir over 2011-16 (Table 4.6).

Table 4.6: Yarramalong Weir 2011-12 to 2015-16

Facility	*Description*	*Driver*	*Cost Estimate ($'000)*				
			2011-12	*2012-13*	*2013-14*	*2014-15*	*2015-16*
Yarramalong Weir	Refurbish: Sheet Piling is Wearing	Condition	-	-	64	-	-

Note: Costs include indirect and overhead costs. Source: GHD (2011).

Other Stakeholders

No other stakeholders have commented on this item.

Consultant's Review

GHD noted that refurbishment of the sheet piling at the Yarramalong Weir has been instigated by a condition assessment report and is needed to protect the toe of the weir from undermining.

GHD considered that the driver for this project is sound and the timing and cost of the works appears to be prudent. Accordingly, GHD assessed this proposed expenditure as valid and prudent.

Authority's Analysis

As noted above, the Authority has applied a 10% saving to items reviewed by GHD.

Item 4: Renewals Projects from 2015-16

SunWater proposed a range of renewals project beyond 2015-16 (Table 4.7).

Table 4.7: Renewals Items Beyond 2015-16

Facility	*Description*	*Drive*	*Value ($'000)*	*Year*
Leslie Dam	Replace Plc, Sqd (24 Off)	Age	139	2016-17
	Replace Crane Control Equipment	Age	86	2016-17
	Repaint downstream face of gate	Age	265	2016-17
	Replace Cableways	Age	2,076	2018-19
	Dam Safety spillway upgrade (2019)[4]	Age	3,245	2018-19
	Replace Switchboard	Age	378	2019-20
	Replace Cable	Age	446	2019-20
	Replace Control Equipment	Age	281	2019-20
	Replace Switchboard	Age	192	2019-20
	Replace Cable	Age	1,115	2020-21
	Refurbish: Painting and reseal gates (4 off)-actual costs	Age	85	2020-21
	Refurbish: Replace bulkhead guides	Age	206	2021-22
	Refurbish: Paint upstream face	Age	92	2024-25
	09UCO-REFURB: WTP Raw Water Pumps - SWB	Age	88	2024-25
	Refurbish: Blast and paint the LHS 914 mm river conduits as identified in 5-yearly dam safety (2004)	Age	109	2026-27
	Refurbish: Paint upstream face	Age	97	2026-27
	Replace Safety Fencing (Disch Ch.)	Age	79	2028-29
	10UCO11REFURBISH FOUNDATION DRAINS	Age	77	2029-30
	11UCO-Refurbish: replacement of ram seal	Age	87	2030-31
	11UCO01REFURB: PAINT UPSTREAM FACE-GT05	Age	80	2030-31
	Replace Plc, Sqd (24 Off)	Age	191	2031-32
	Replace Alternators	Age	910	2031-32
	09UCO-Refurbish: Paint upstream face	Age	115	2032-33
	13UCOXX REFURB/ PAINTING AND NEW SEALS	Age	124	2032-33
	Refurbish: Paint upstream face	Age	115	2032-33
	Replace Control Equipment	Age	405	2034-35
	Repaint downstream face of gate	Age	133	2034-35
	10UCO11: REFURBISH FOUNDATION DRAINS	Age	91	2034-35
Leslie Dam WTP	Replace switchboards as per design 2012	Age	295	2016-17
	Replace Treatment Plant Unit	Age	197	2020-21

[4] Excluded from the renewals expenditure to be included in recommended prices.

Facility	*Description*	*Drive*	*Value ($'000)*	*Year*
	Enhance: Upgrade Water Treatment Plant	Age	130	2033-34
Yarramalong PS	Replace Elect – Switchboard	Age	114	2016-17
	Refurbish: Pump at Yarramalong PS	Age	125	2017-18
	Replace Computer, Unysis	Age	73	2021-22
	Refurbish: Yarramalong Pump Station - Refurbish Pump No 2	Age	64	2021-22
	10UCO32 REFURBISH PUMP AND MOTOR	Age	102	2021-22
	Refurbish: Replace bulkhead guides - actual costs	Age	64	2021-22
	Replace Surge Protection, Critec (27 Off)	Age	77	2023-24
	Refurbish: Yarramalong Pump Station - Refurbish Pump No 2	Age	84	2027-28
	10UCO32 REFURBISH PUMP AND MOTOR	Age	118	2027-28
	Replace Control Equipment	Age	748	2028-29
	Replace Pump Column	Age	94	2029-30
	Replace Submersible Pump/Motor	Age	363	2029-30
	Replace Pump Column	Age	94	2029-30
	Replace Submersible Pump/Motor	Age	432	2029-30
	Refurbish: Yarramalong Pump Station - Refurbish Pump No3	Age	126	2029-30
	Replace Pump Column	Age	94	2029-30
	Replace Submersible Pump/Motor	Age	432	2029-30
	Refurbish: Pump at Yarramalong PS	Age	85	2032-33
	Refurbish: Yarramalong Pump Station - Refurbish Pump No 2	Age	97	2033-34
	10UCO32 Refurnish Pump and Motor	Age	212	2033-34
	Replace Siphon Unit 1 (D/S Unit)	Age	354	2034-35
	Replace Siphon Unit 3 (U/S Unit)	Age	111	2034-35
	Replace Control Equipment	Age	87	2034-35
Yarramalong Weir	Replace Pump Column	Age	81	2016-17
	Replace Submersible Pump/Motor	Age	717	2017-18
Nangwee Weir	Replace Access Road	Age	85	2028-29
Wando Weir	Replace Trash Racks	Age	131	2030-31

Note: Costs include indirect and overhead costs. Source: GHD (2011).

Other Stakeholders

No other stakeholders have commented on these items.

Consultant's Review

GHD reviewed this list of renewals projects beyond 2015-16 to determine whether the expenditures were required and whether the timing was appropriate. GHD noted that all of the projects were scheduled on the planned maintenance frequency or useful life of the asset.

GHD considered that while the projects' forecast costs were within an acceptable order of magnitude based on engineering judgement, the detailed information on each project was not available to enable GHD to analyse the cost estimates in detail. Nevertheless, GHD assessed this proposed expenditure as valid and prudent.

Authority's Analysis

The Authority has noted GHD's view that insufficient information was available to enable a detailed review. The Authority subsequently requested a more detailed investigation by SKM (see below for SKM's more detailed analysis) of certain expenditures associated with this, and other, schemes. Also the Authority proposes other initiatives in its assessment of the efficiency gains to be applied to SunWater and to ensure that SunWater makes such information available in the future.

Item 5: Leslie Dam Replacement of Cables

SunWater

According to SunWater's SAP-WMS, the Leslie Dam cables have been in operation since 1985 and were installed as part of the original construction works of the dam. SunWater has proposed expenditure of $1,376,784[5] for replacement of the existing cables in 2018-19.

SKM's Review

(a) Available Information

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

Table 4.8: Documentation Reviewed Specific to Replacement of the LV Underground Cable at Leslie Dam

Document No.	*Document Name*	*Document Title*	*Date*
1109920	1109920-QCA Justification paper H15 Leslie Dam Cables and Cableways	UCO-LES-ELEC-CWAY – Replace Cables	23rd August 2011

Source: SKM (2011)

(b) Prudency Review

SKM considered that SunWater has largely followed the policies and procedures that it has in place to determine annuity item replacement/refurbishment dates and costs for such.

[5] The Authority notes that, for this item, the cost estimate in SAP is less than cost outlined in the NSP. The Authority's analysis (and that of SKM) has proceeded of the basis of the cost estimate in SAP.

In SunWater's Whole of Life Maintenance Planning Tool (Master), SunWater has allocated a standard run to failure asset life of 35 years and a maximum condition assessment frequency of every five years. SKM advised that, currently in Australia, electrical distribution network services providers are allocating undergrounded XLPE (cross linked polyethylene) low voltage cable a run to failure asset life of 60 years.

SKM therefore considered the standard run to failure asset life applied by SunWater to this asset class of 35 years to be conservative for this asset type.

SunWater has applied its risk evaluation method to this asset and determined that, during the most recent risk assessment in 2005, this asset is in a Low risk category. SKM viewed the WMS record for this asset and confirmed that it has been allocated a Low risk rating. An overall risk category of Low does not trigger any reduction in the standard run to failure asset life of this type of asset and SKM confirmed this to be the case for this asset.

The next stage of SunWater's method for determining asset replacement/refurbishment timing is by means of adjusting the risk adjusted run to failure asset life according to the variance of the condition score of the asset, at the time the last condition assessment was undertaken, with the condition that the standard asset condition decay curve predicts at that time.

The last condition assessment was undertaken in 2010 and yielded a condition score of 3 (moderate deterioration with minor refurbishment required to ensure ongoing reliable operation) being allocated for the following criteria: conduits/ducts/hat sections, cable pits and lids, cable way (based on age as a percentage of replacement life). From this assessment, SunWater's assessor projected a remaining life of 10 years for this asset.

A condition score of 3 in 2010 indicated that the asset is in a better condition than the standard asset condition decay curve would suggest. Applying this score to SunWater's condition based replacement asset life adjustment tool yielded a projected run to failure life of 67 years and a projected replacement date of 2051-52. This projected run to failure asset life is of a similar order to the standard run to failure life adopted by power network distribution entities.

SKM noted that, in its asset replacement report, SunWater states that the asset is performing well against the standard decay curve and if further evidence from future condition assessments backs up this view it may be able to push the replacement of the cable out some years. SunWater also indicated in its report that while the current system is not giving any apparent trouble it has never actually tested the electrical system and it is likely that this will occur over the next two to three years. SunWater suggested that electrical assets may have different characteristics [to the] standard curve [and] this needs to be continuously challenged.

SKM agreed that the standard decay curve adopted may not be appropriate for electrical assets which tend to have a different failure mode than civil and mechanical assets in that failure is often sudden and catastrophic as opposed to a consequence of gradual deterioration. SKM also considered that it would be prudent for SunWater to benchmark standard asset lives for electrical assets against standard asset lives adopted by power utility companies, particularly distribution network service providers. SKM generally would adopt a longer asset life for these assets than SunWater has adopted.

(c) Option Analysis

SunWater has advised that an options analysis will need to be carried out two years before any planned works are commenced and that this options analysis would focus on the optimum time for replacement of the asset and each of the components.

SKM agreed that it would be appropriate to conduct condition assessments to include electrical testing of the infrastructure such as insulation breakdown testing, earth impedance testing and similar to determine the condition of the cable installation.

SunWater has also advised that, at this stage of planning there is no obvious alternative to 'like for like' replacement that would reduce costs by more than 30%. SKM accepted that it is highly likely that an option study would conclude that a like for like replacement of the cables would be the preferred option. SunWater has also advised that, as it is likely that the options study would suggest that only the cables would need replacement and not the cableways then the estimate for this renewals expenditure reduce to approximately $1.1 million.

On the basis of the above, SKM suggested that it would be appropriate to conduct a condition assessment of both the cable and cableways prior to establishing a planned replacement date. SKM noted that the cable ways, having a standard run to failure life of 60 years (per SunWater's systems) would most likely not need replacing at the same time as the planned replacement of the cables and hence agree that, if the cables were to be replaced in 2018-19 that the costs would be less than that submitted to the Authority for this annuity item.

SKM considered that the standard asset run to failure life for this asset class adopted by SunWater to be conservative and not in keeping with industry practice for this asset type. If a run to failure standard life of 60 years is adopted, per standard power distribution industry practice, then the projected replacement date would be 2044-45 which is beyond this current price setting annuity period.

In summary, SKM did not consider that the proposed replacement date of 2018-19 is prudent as the run to failure asset life adopted by SunWater for this asset class is significantly below the run to failure asset life adopted by power distribution utilities and the condition of the cable indicates that it is deteriorating less rapidly than the standard condition decay curve adopted by SunWater would predict.

SKM recommended that SunWater conducts a condition assessment of the cable together with undertaking a benchmarking of asset life for this class of asset prior to determining a projected replacement date.

(d) Efficiency Evaluation

For assets that are planned to be replaced five years or more hence of the planning date, SunWater uses a valuation method based on a Bill of Materials (BOM) for the asset. The BOM has been developed from built drawings and a 1996-97 value attached to each item making up the BOM. The 1996-97 value for each line is then escalated by a multiplier determined by Cardno in a 2007-08 valuation. This multiplier varies according to the component type being escalated. For example, all electrical equipment was escalated by a 2.13 multiplier. The sum of costs was then adjusted by an indirect multiplier (in this case (1+43.62%) to take account of annuity item replacement specific factors such location, project management costs etc.

This approach (including the indirect uplift multipliers) has been audited by Arthur Anderson in 2000 and found to be robust and appropriate. Given the large portfolio of assets that SunWater is required to determine a replacement value for over a 25-year asset replacement/refurbishment cycle, SKM considered the approach to be appropriate.

SKM reviewed SunWater's calculation for determining a replacement cost and confirmed that it has applied the indirect cost multiplier contained in the BOM for this asset item in its SAP-WMS of 43.62%. Whilst this is at the upper end of the range of multipliers used by SunWater to capture asset item specific costs such as location, project management, engineering SKM had insufficient information to determine its reasonableness.

Accordingly, SKM benchmarked the annuity item replacement costs proposed by SunWater as submitted to the Authority against its database costs for a modern equivalent electrical asset. SKM categorised its estimates based on its modern equivalent asset unit rate database as a class 4 estimate, having an accuracy of +30%/-20%. SKM compared its estimate to that of SunWater below (Table 4.9).

Table 4.9: Leslie Dam Replacement of Cables - Comparison of SunWater and SKM Cost Estimates (Real $)

SunWater Estimate	*SKM Estimate*	*Variance*
$1,376,784	$1,247,000	+10.4%

Source: SKM (2011).

The cost submitted by SunWater for replacement of this item is within the typical estimating range of SKM's estimated cost for a modern equivalent replacement asset. As such, SKM considered the SunWater proposed annuity item value of $1,376,784 to be efficient on the assumption that, if SunWater adopts a 60-year replacement life, the cableways will be replaced at the same time as the cable.

(e) Summary and Conclusions

SKM did not consider that the timing and need for replacement of this annuity item is prudent. Therefore, SKM recommended that this proposed annuity item not be included in forecasts. However, the cost of the item as proposed by SunWater was considered to be efficient.

Authority's Analysis

The Authority notes that the NSP lists the four components of this item (scheduled to occur in 2018-19) at $1.704 million which is expressed in real, 2010-11, terms. Consultants GHD's analysis lists the four items in nominal terms at $2.07 million. SKM's analysis was undertaken on three components of the item in nominal terms at $1.376 million. In addition, SKM's review was based on SunWater's SAP system, which uses a simplified method for calculating indirect and overhead costs compared to SunWater's financial system. It is the financial system which has informed the NSPs and the submissions made by SunWater to the Authority – hence the anomaly between the NSP and the SKM values. However, where direct costs were reviewed by SKM this aligns with the direct costs submitted to the Authority.

The Authority accepts SKM's recommendation that this project is not prudent and therefore should be excluded from forecast renewals expenditure for the current planning period.

Conclusion

In summary, various projects for the Upper Condamine were sampled. Of these:

(a) SKM was able to conduct a detailed review of the replacement of cables at Leslie Dam which were found to not be prudent; and

(b) a 10% cost saving was applied to the remaining sampled items.

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

Therefore, the Authority recommends that forecast renewals expenditure should be adjusted as noted below in Table 4.10.

Table 4.10: Review of Forecast Renewals Expenditure 2011-36 (Real $'000)

Item	*Year*	*SunWater ($)*	*Authority's Findings*	*Recommended ($)*
Sampled Items				
1. Leslie Dam	various	10,378	Insufficient Information	10% saving applied
2. Leslie Dam Cableways	2018-19	2,076	Considered by SKM not to be prudent	0
3. Yarramalong Pump Station	various	4,337	Insufficient Information	10% saving applied
4. Yarramalong Weir	various	862	Insufficient Information	10% saving applied
5. Nangwee Weir	2028-29	85	Insufficient Information	10% saving applied
6. Wandoo Weir	2030-31	131	Insufficient Information	10% saving applied
7. Leslie Dam WTP	various	622	Insufficient Information	10% saving applied
Non-Sampled Items				10% saving applied

Source: SunWater (2011), GHD (2011), SKM (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

No other stakeholders have commented on this matter.

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.

4.7 Allocation of Headworks Renewals Costs According to WAE Priority

Previous Review

For the 2006-11 price path, the renewals costs for the Upper Condamine bulk water infrastructure were apportioned between priority groups using converted nominal water allocations. The WPCF for the Upper Condamine WSS was 2.8; that is, one ML of high priority WAE was equivalent to 2.8 ML of medium priority WAE.

Stakeholder Submissions

SunWater

For the 2012-17 regulatory period, SunWater proposed that renewals costs for bulk water infrastructure be apportioned in accordance with the share of utilisable storage headworks volumetric capacity dedicated to that priority group – as measured by the headworks utilisation factor (HUF).

SunWater submitted that, in general, the HUF allocates a greater proportion of capital costs per ML to high priority WAE. Specifically, the HUF methodology takes into account water sharing rules, critical water sharing arrangements (CWSAs) and other operational requirements that typically give high priority entitlement holders exclusive access to water stored in the lower levels of storage infrastructure.

SunWater (2010d) submitted a detailed outline of the HUFs methodology, outlining its derivation and application for each scheme. This methodology, discussed in detail Volume 1, can be summarised as follows.

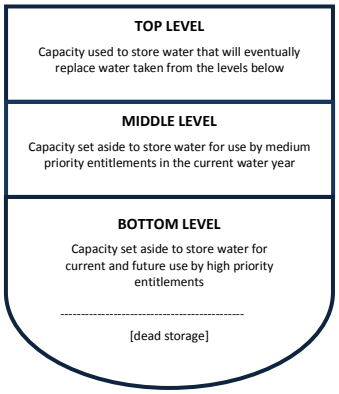
Step 1: Identify the water entitlement groupings for each scheme, as listed in DERM's Water Entitlement Register, and establish which groups are to be considered as 'high' priority (HP) and 'medium' priority (MP) for the purposes of the HUFs calculation[6].

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

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

[6] If more than two priority groups exist, water sharing rules and other differentiating characteristics are taken into account to determine whether they are included in the high or medium priority grouping, or neither.

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



Step 4: Assess the hydrological performance in 15-year sequences of each layer identified in (3) to determine the probability of each component of headworks storage being accessible to the relevant priority group.

Step 5: Calculate the percentage of storage headworks capacity to which medium priority users have access for each of the 15-year sequences analysed in Step 4**:**

$$\frac{MP\ Utilised\ Capacity}{Total\ Utilised\ Capacity} = \frac{MP_{1(utilised)} + MP_{2(utilised)}}{MP_{1(utilised)} + HP_{1(utilised)} + MP_{2(utilised)} + HP_{2(utilised)}}\ (\%)$$

Set HUF_{mp} equal to the minimum of these values to reflect the worst 15-year period (HUF_{hp} = 1-HUF_{mp}).

If more than two types of water entitlements were aggregated in Step (1) these are then disaggregated.

The parameters used for determining the HUFs for the Upper Condamine WSS are summarised in Table 4.11. The HUFs for this scheme (SunWater, 2010d) are 11% for Medium Priority, 86% for High A Priority and 3% for High B Priority.

Table 4.11: Application of HUFs Methodology

STEP 1: Water Entitlement Groups (DERM's Water Allocation Register)

Nominal Group	(ML)	HUF Group	(ML)
Medium Priority	22,165	MP_A	22,165
High-A Priority	3,262	HP_A	3,387
High-B Priority	125		
Risk A Priority	7,320	not included	
Risk B Priority	925	not included	

STEP 2: ROP Conversion Factor Adjustment

Conversion Factor: ROP_{CF}	N/A
Maximum volume of HP: $HP_A max$	3,387
Corresponding volume of MP: $MP_A min = MP_A-(HP_A max-HP_A)*ROP_{CF}$	22,165

STEP 3: Water Sharing Rules & Operational Requirements

Water Sharing Rules	
Volume below which MP not available: $MP_0 AA$	21,357
Volume above which max. MP available: $MP_{100} AA$	59,253
CWSAs and other operational requirements	
Likely increase in volume effectively reserved for HP: MP_0	21,357
Likely increase in min. storage before maximum MP available: MP_{100}	59,253
Key Dam Level Measures	
Full Supply Level: FSV_{hwks}	106,200
Dead Storage Level: DSL_{hwks}	2,130

STEP 4: Hydrologic performance of headworks storage

Storage Layer	Storage Capacity (ML)	Prob. of Utilisation	Utilised Capacity (ML)
Top: $\max\{(FSV_{hwks}-MP_{100}),0\}$*	MP_2 = 31,146; HP_2 = 15,802	0%	MP_{2u} = 0; HP_{2u} = 0
Middle: $\min\{(MP_{100}-MP_0),(FSV_{hwks}-MP_0)\}$	MP_1 = 37,896	5%	MP_{1u} = 1,842
Bottom: $MP_0 - DSV_{hwks}$	HP_1 = 19,227	78%	HP_{1u} = 14,941

STEP 5: Calculation of HUFs for each Water Entitlement Group

Formula	HUF Group	Nominal Group
MP_A: $(MP_{1u}+MP_{2u}) / (MP_{1u}+HP_{1u}+MP_{2u}+HP_{2u})$ = (1,842+0) / (1,842+14,941+0+0)	HUF_{mp} = 11%	Medium Priority = 11%
HP_A: $(HP_{1u}+HP_{2u}) / (MP_{1u}+HP_{1u}+MP_{2u}+HP_{2u})$ = (14,941+0) / (1,842+14,941+0+0)	HUF_{hp} = 89%	High-A Priority = 86% High-B Priority = 3%

*Note: *Apportioned between MP_2 and HP_2 using the ratio MP_1:HP_1. Source: SunWater (2010d).*

Other Stakeholders

Cotton Australia (2011) submitted that with the Government decision on zero asset values on infrastructure for irrigation, SunWater has managed under the HUFs to shift the asset values to urban and industrial users whom they can charge a rate of return on infrastructure and all the operating costs to irrigators. HUFs cannot be assessed on their own without including the impact of operational costs being apportioned on a per ML basis for high priority and medium priority allocations.

The participants at the Round 2 consultation expressed support for the application of the HUF to allocate costs between high and medium priority users. They considered that this analysis at least reflects the poor reliability associated with this scheme on an ongoing basis. It is understood by participants that if this approach is applied, Condamine irrigators would be allocated 11% of the renewals annuity.

The participants of the Round 1 consultation considered that Leslie Dam provides very little service to irrigators and irrigators should only be required to pay a small portion of Leslie Dam's costs. They mentioned that water is supplied to Warwick under emergency supply provisions outlined in Regulation.

Authority's Analysis

The Authority commissioned Gilbert & Sutherland (G&S) to conduct an independent review of SunWater's proposed HUFs methodology. G&S (2011) concluded that the input data and model sources were appropriate, calculations were accurate to the method and input data utilised, the methodology exhibits rigour and is generally robust in providing consistent outcomes. G&S also recommended some amendments to SunWater's approach.

As discussed in Volume 1, the Authority endorsed SunWater's proposed approach for the allocation of capital costs, subject to the following amendment proposed by G&S that the method for apportioning the top layer of storage between medium and high priority be modified to reflect the ratio of nominal volumes rather than ratio of MP_1:HP_1

SunWater (2011y) accepted these recommendations and submitted recalculated HUFs for each scheme. For the Upper Condamine WSS, the amendments result in no change to the HUF values since the probability of utilisation in the top layer is zero.

Table 4.12: Revised HUF Calculations

STEP 4: Hydrologic performance of headworks storage

Storage Layer	Storage Capacity (ML)	Prob. of Utilisation	Utilised Capacity (ML)
Top layer			
Initial	MP_2 = 31,146; HP_2 = 15,802	0%	MP_{2u} = 0; HP_{2u} = 0
*Revised**	MP_2 = 40,724; HP_2 = 6,223	no change	MP_{2u} = 0; HP_{2u} = 0
Middle Layer	MP_1 = 37,896	5%	MP_{1u} = 1,842
Bottom Layer	HP_1 = 19,227	78%	HP_{1u} = 14,941

STEP 5: Calculation of HUFs for each Water Entitlement Group

	Initial	Revised	Nominal Group
HUF_{mp}	11%	11%	Medium Priority = 11%
HUF_{hp}	89%	89%	High-A Priority = 86% High-B Priority = 3%

*Note: *Apportioned between MP_2 and HP_2 using the ratio of nominal volumes (MP_A:HP_A).*

The Authority estimates that based on the HUF methodology, the conversion for medium priority to high priority would be 52.95:1. This compares with the water pricing conversion factor of 2.8:1 used for the 2006-11 price paths.

The HUF results in 11% of renewals costs being attributed to medium priority users compared to 68.5% under the previous water pricing conversion factor.

The Authority notes Cotton Australia's view that under HUFs, because infrastructure costs are shifted to non-irrigation users, there is a risk that operating costs will be allocated disproportionately to irrigation users. The allocation of the quantum of costs and the effect on price is discussed in Chapter 6.

In response to participants at Round 1 consultation who considered that because Leslie Dam provides only modest service to irrigator and this should be reflected in approaches to cost allocation, the Authority notes that cost allocation under HUFs has shifted to 11% from 68.5% under the previous approach.

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 Upper Condamine WSS the recommended renewals annuity for the 2012-17 regulatory period is shown in Table 4.13. The table shows the total renewals annuity recommended by the Authority and the component amounts for medium and high priority users. Also presented for comparison is SunWater's total renewals annuity for 2006-11 and SunWater's proposed total annuity for 2012-16. SunWater did not submit a disaggregation between high and medium priority customers.

Table 4.13: Upper Condamine WSS Renewals Annuity (Real $'000)

	Actuals						*Recommended*				
	2006-07	***2007-08***	***2008-09***	***2009-10***	***2010-11***	***2011-12***	***2012-13***	***2013-14***	***2014-15***	***2015-16***	***2016-17***
Total SunWater	186	221	213	129	209	724	727	718	710	711	711
Total Authority	-	-	-	-	-	-	538	529	523	529	521
High Priority	-	-	-	-	-	-	442	435	430	434	428
Medium Priority	-	-	-	-	-	-	96	94	93	94	93

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

5. OPERATING COSTS

5.1 Background

Ministerial Direction

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 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 scheme to include service provision, compliance, insurance, recreation and other supporting activities (these were not classified by direct and indirect costs). SunWater noted that:

(a) a Senior Operator is located at the Pittsworth depot and is responsible for the day-to-day water supply management and for delivery of the programmed works;

(b) service provision relates to:

(i) water delivery – which requires the ongoing monitoring of stream flows and storage levels to schedule releases efficiently and the data from gauging stations to be made available in real-time; and

(ii) customer service and account management – through maintaining SunWater's Customer Support Group where enquires can be made about a customer's account and service delivery via telephone, fax or email in normal business hours maintaining;

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

(i) the ROP and ROL – a major part of which is gathering and reporting information data at quarterly and annual intervals on water sharing rules, ROP amendments and modifications, water accounting and reporting on stream flow, water quality and other data (Table 5.1).

Table 5.1: DERM's Water Quality Monitoring Requirements of SunWater

Storage	***Monthly Monitoring Requirements***			
	Inflow	***Head Water***	***Tail Water***	***BGA***
Leslie Dam	Yes	Yes	Yes	Yes
Cecil Plains Weir	No	Yes	Yes	No

Includes sampling for the following variables: dissolved oxygen, electrical conductivity, pH, temperature, total nitrogen, phosphorus and BGA. Source: (SunWater, 2011).

(ii) dam safety – as Leslie Dam is a referable dam under the *Water Act 2000*, SunWater is required to have a program in place to minimise the risk of dam failure, which involves documenting, recording and reporting on dam safety. Audits and thorough inspections are carried out annually.

Routine dam safety inspections are carried out monthly on Leslie Dam and quarterly and after every flood event on the weirs. Specific dam safety inspections are required at Leslie Dam, which include monitoring of embankments, piezometers, seepage and the general condition of the storages as defined in the dam surveillance specification.

Inspections also include condition inspections to identify and plan maintenance requirements and to provide information for management planning of water delivery assets. Audits and more thorough inspections are carried out annually and even more thorough compliance inspections and audits are carried out five yearly.

There are also significant compliance issues in relation to documenting, recording and reporting on dam safety, the cost of which can be significant.

(iii) environmental management to comply with the ROP and *Environmental Protection Act 1994* which require SunWater to have policies and procedures in place to deal with a range of environmental risks such as fish deaths, chemical usage, pollution, contamination and approvals for in-stream works.

(iv) land management (weed and pest control, rates and land tax, security and trespass and access to land owned by SunWater) as well as other obligations in relation to workplace health and safety, financial reporting and taxation and irrigation pricing;

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

(e) SunWater has sought to transfer the management and cost of recreation facilities to private operators or Government. However, recreation facilities at Leslie Dam continue to be operated and maintained by SunWater (the cost of which is outlined further below); and

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

Previous Review

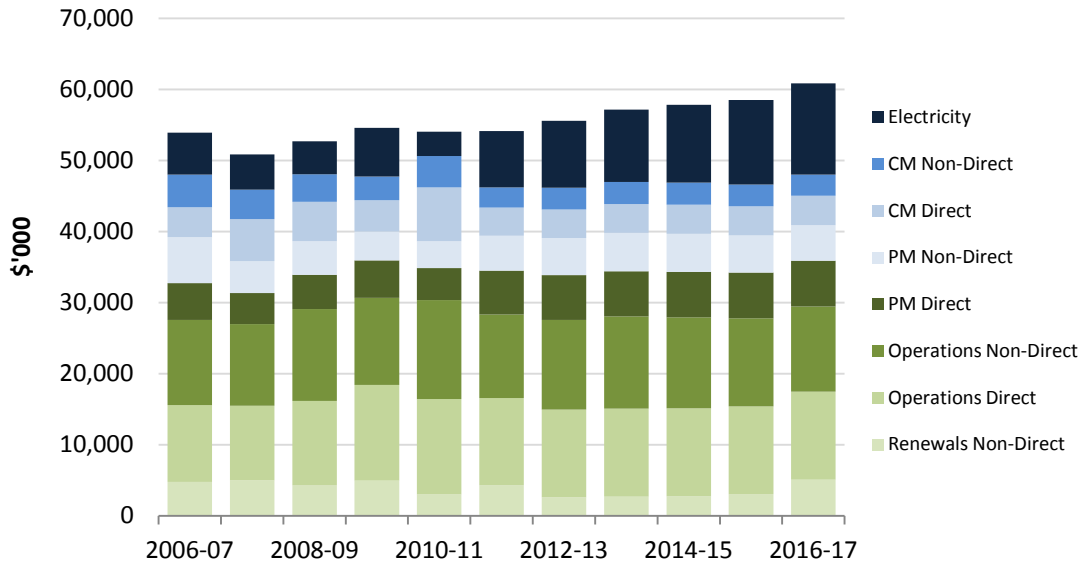
For the 2006-11 price paths, Indec identified annual cost savings of between $3.8 million and $5.5 million (2010-11 dollars) or 7.5% to 9.9% of total annual costs, which SunWater was to achieve during the 2006-11 price paths (SunWater, 2006a). See Volume 1.

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.

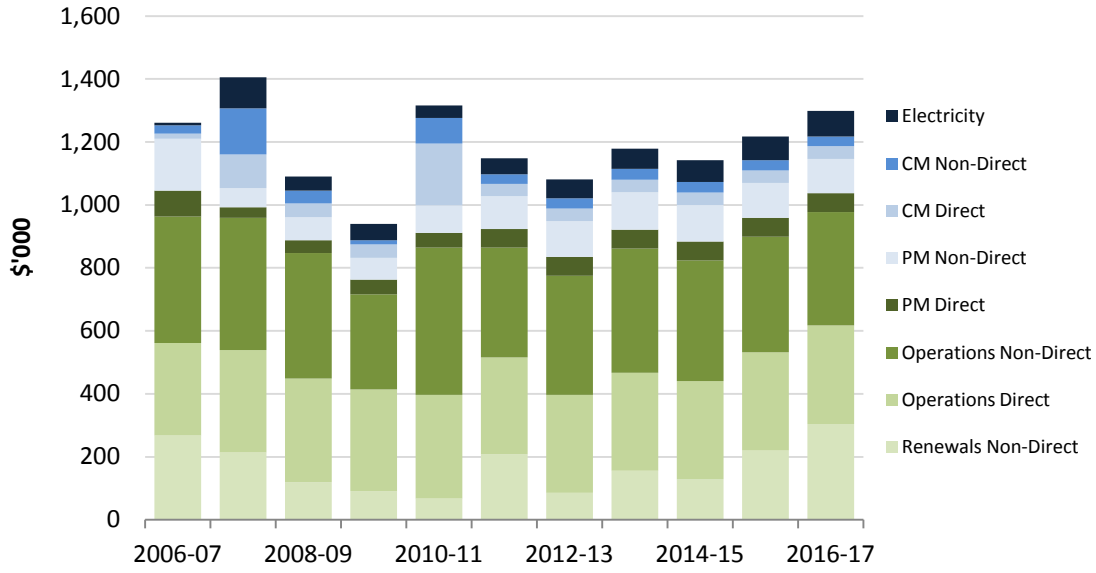
Figure 5.1: SunWater's Total Operating Costs (Real $'000) – All Service Contracts



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 Upper Condamine WSS (all sectors) is shown in Figure 5.2 and Tables 5.2 and 5.3.

Figure 5.2: Total Operating Costs – Upper Condamine WSS (Real $'000)



Source: SunWater (2011).

Table 5.2: 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	695	745	729	626	798	657	689	706	695	679	673
Electricity	8	98	45	52	41	50	60	64	69	76	81
Preventive maintenance	247	95	114	116	133	164	174	179	176	170	169
Corrective maintenance	42	253	84	55	277	69	72	74	73	72	72
Renewals non-direct	268	214	119	90	67	207	86	155	129	220	304
Total	**1,261**	**1,405**	**1,090**	**940**	**1,316**	**1,148**	**1,081**	**1,178**	**1,142**	**1,217**	**1,299**

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

Table 5.3: 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	223	232	216	193	270	249	252	252	252	252	252
Electricity	8	98	45	52	41	50	60	64	69	76	81
Materials	48	54	30	26	77	33	33	34	34	35	35
Contractors	10	49	27	53	115	28	29	29	30	30	30
Other	111	130	140	141	111	96	95	96	95	95	96
Non-direct	861	841	631	475	703	692	611	703	661	729	805
Total	**1,261**	**1,405**	**1,090**	**940**	**1,316**	**1,148**	**1,081**	**1,178**	**1,142**	**1,217**	**1,299**

Note: Renewals direct costs are discussed in the previous chapter. Non-direct costs include 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. Source: SunWater (2011ap).

In its NSP, SunWater submitted that the operating costs for this scheme averaged $983,000 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 outlined in the NSP for 2011-16 are $974,000 per annum.

Other Stakeholders

No other stakeholders provided comment regarding this item.

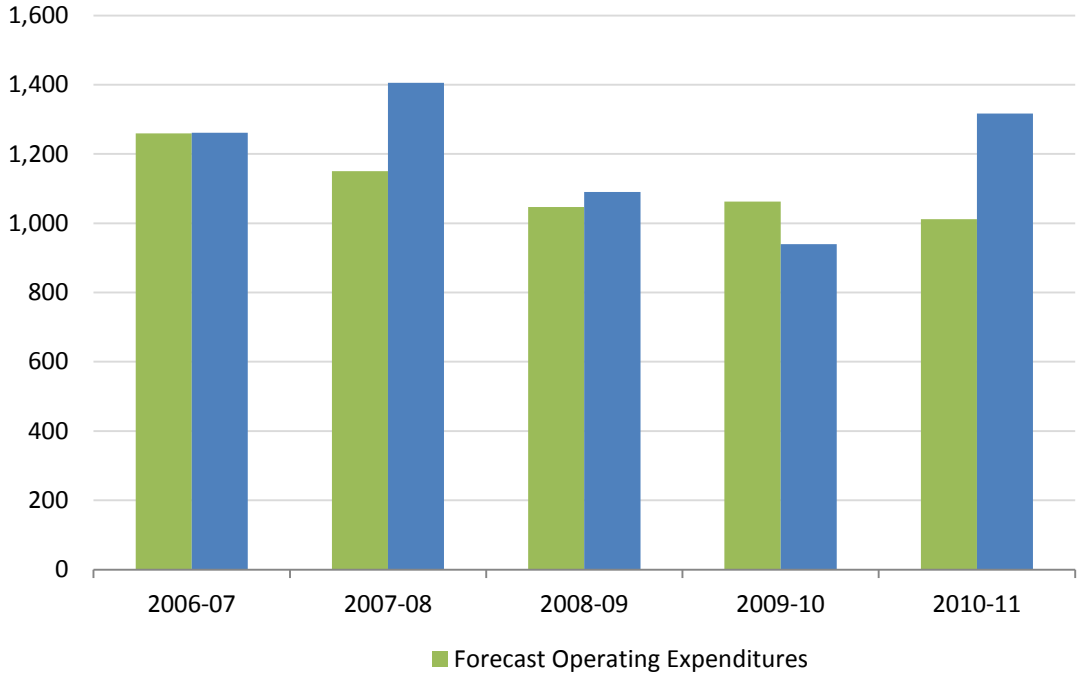
Authority's Analysis

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 Upper Condamine WSS is shown in Figure 5.3 below. For this scheme, SunWater's actual operating costs were more than Indec's forecast efficient operating costs by $482,000 over the period.

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 2010-11. 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

Introduction

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, such as communication systems (Supervisory Control and Data Acquisition or SCADA), 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 is detailed in Volume 1.

As noted above, SunWater categorises non-direct costs as either overheads or indirect costs.

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 total direct labour costs (DLCs) be used to allocate non-direct costs between service contracts.

Total non-direct costs and those allocated to the Upper Condamine WSS are outlined below Table 5.4.

Table 5.4: 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
Upper Condamine WSS	861	841	631	475	703	692	611	703	661	729	805

Source: SunWater (2011ap).

The non-direct costs for this scheme include a portion of SunWater's total overhead costs (for example, HR, 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

Participants of the Round 2 consultation considered that in the context of the Deloitte Touche Tohmatsu (Deloitte) report, there are a lot of indirect/overhead costs being apportioned to this scheme. They considered that because in many years no water is made available, this may not be appropriate. The participants expressed uncertainty regarding the benefit of head office and regional offices.

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 real terms) 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 Pioneer Valley Water Board (PVWater) and other Australian rural water service providers. Deloitte noted that PVWater Board'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 can make comparisons unreliable.[7]

The Authority accepted that $495,314 of full time equivalent (FTE) staff costs were not efficient and should be excluded from SunWater's total non-direct costs (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.

Deloitte reviewed SunWater's proposal 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 unity (that is, targeted DLC).

[7] For example, PVWater has only four FTE staff. For the benchmarking exercise, PVWater needed to estimate the proportions of staff time spend on administration versus operations and maintenance activities, which varies 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.

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

The Authority notes the comments of participants from Round 2 consultation that there are excessive indirect/overhead costs being apportioned to this scheme. Participants also questioned the benefit of head office and regional office costs, particularly in years where no water is made available.

The Authority considers that:

(a) given the nature of SunWater's business, head office and regional office costs will invariably be incurred;

(b) the cost allocation methodology proposed by SunWater is appropriate (subject to the adoption of Deloitte's recommendations); and

(c) as outlined in Chapter 2, irrigators are best placed to manage short-term volume risk particularly where a tariff structure is in place where the volumetric charge recovers variable costs and a fixed charge ensures the recovery of the balance of costs.

The Authority's recommended level of non-direct costs to be recovered from the Upper Condamine WSS (from all customers) is set out in Table 5.5 below. The allocation of these costs between high and medium priority customers is also discussed below.

Table 5.5: Recommended Non-Direct Costs Including Indirect Renewals (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	861	841	631	475	703	692	611	703	661	729	805
Authority	-	-	-	-	-	-	589	665	618	670	731

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 Parsons Brinckerhoff (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 5.6 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 5.6: 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	294	325	330	323	330	308	311	312	312	313	313
Preventive maintenance	82	34	40	47	46	59	60	60	60	60	60
Corrective maintenance	16	107	44	42	196	39	39	39	40	40	40
Electricity	8	98	45	52	41	50	60	64	69	76	81
Total	**400**	**564**	**459**	**464**	**613**	**456**	**469**	**476**	**481**	**488**	**494**

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

Table 5.7: SunWater Direct Operating 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	223	232	216	193	270	249	252	252	252	252	252
Electricity	8	98	45	52	41	50	60	64	69	76	81
Materials	48	54	30	26	77	33	33	34	34	35	35
Contractors	10	49	27	53	115	28	29	29	30	30	30
Other	111	130	140	141	111	96	95	96	95	95	96
Total	**400**	**564**	**459**	**646**	**613**	**456**	**469**	**476**	**481**	**488**	**494**

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).

Other Stakeholders

No submissions were received from other stakeholders on this matter.

Authority's Analysis

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

GHD noted that there were substantial information deficiencies relating to the information provided by SunWater. As an example, GHD report that sampling was not possible due to the level of aggregation in SunWater's SAP WMS. GHD report that, alternatively, information was gathered via direct interviews and information sessions with analysis undertaken of the information made available. Comparisons against published benchmarks were made, where possible.

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.

GHD'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 costs of delivering water and meeting compliance obligations such as: collating water orders, scheduling releases and delivering water; cleaning of trash screens; recording and reporting releases, water use and system losses; and undertaking dam surveillance.

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 5.6 above.

Operations costs include recreational facility costs (see Table 5.8). SunWater has sought to minimise the cost of providing recreational facilities and transfer the management (and cost) of recreation facilities to private operators or local governments. However, recreation facilities at Leslie Dam continue to be operated and maintained by SunWater.

Table 5.8: Recreational Facility Costs (Real $'000)

	2011-12	*2012-13*	*2013-14*	*2014-15*	*2015-16*
Recreational Facility Cost	80	92	98	84	278

Source: SunWater (2011).

Other Stakeholders

Central Downs Irrigators Limited (2010) submitted that they are concerned that there will not be enough opportunity and time for licensees to evaluate the methods used to determine SunWater's competitive and efficient operational, maintenance and administrative costs.

The participants of the Round 1 consultation considered that ongoing efficiency of SunWater's operations should be monitored during the price path.

The participants at the Round 2 consultation considered that the GHD report lacks analysis of efficient operating costs and is unacceptable as a basis for the Authority to assess efficient prices.

Cotton Australia (2011) submitted that recreational facility costs are getting out of control both as renewals and operational. They considered that some of the reasons given for why water users should continue to pay for these facilities need to be examined closely. Cotton Australia further submitted that there is a history of very bad decisions being made in the past by SunWater and Government which water users are now paying for.

Cotton Australia (2011) submitted that SunWater appear to be able to separate and add in costs across different users until it comes to recreation facilities. Cotton Australia suggested that it is not hard to come up with usage numbers based on irrigation or urban and industrial then apportion costs.

Authority Analysis

Consultant's Review

GHD considered that costs that have been incurred in the management and administration of the Upper Condamine WSS during the 2006-11 price path (including costs associated with contractors and materials) are appropriate and provide a robust basis with which to forecasts costs.

However, GHD recommends that:

(a) an online/automated ordering system for the more commonly used water products should be offered to reduce the costs associated with the manual handling of orders; and

(b) the number of water products made available should be rationalised to decrease the complexity of administration.

However, GHD did not adjust SunWater's proposed operations costs.

SunWater's Response

SunWater submitted that GHD's recommendations are not practical, given:

(a) manual processing cannot be abandoned as some customers will prefer current arrangements and having two separate systems would increase the complexity and probability of error significantly; and

(b) any rationalisation of the number of water products made available would need to be considered by DERM (to be allowed for in the Condamine and Balonne ROP) and progressed by customers.

Conclusion

The Authority notes the submissions of stakeholders and considers that:

(a) given the extensions of time provided by Government to the review, sufficient time *has* been made available for irrigators to establish an informed view of what constitutes prudent and efficient operating costs. The Authority considers that this has been facilitated through SunWater's NSP and GHD's report being made available for irrigator comment and the Authority conducting 2 rounds of extensive consultation;

(b) monitoring the efficiency of SunWater's operating costs during the 2012-17 regulatory period will be achieved primarily through the IAC meeting on a regular basis;

(c) the GHD report constitutes only one component of the Authority's analysis to recommend efficient operating costs; and

(d) recreational costs are of an operational nature and Government's policy, as prescribed by the Ministerial Direction, is that SunWater are to recover recreation management costs through prices/tariff structures.

The Authority also notes the recommendation of GHD that previously incurred operations expenditure is appropriate and provides a robust basis with which to forecasts costs. The Authority also notes SunWater's response to these recommendations.

Accordingly, the Authority concludes:

(a) that GHD's recommendation regarding the introduction of an online/automated ordering system *not* be implemented for the 2012-17 regulatory period. Consideration regarding the practicalities and merits of an online/automated ordering system and associated costs and their allocation, are largely beyond the scope of the Authority's review and remain a matter between SunWater and its customers;

(b) that any rationalisation of water products to be made available is beyond the scope of the Authority's review and remains a matter between SunWater, its customers and DERM; and

(c) on the basis of the consultants' reviews (the Authority also notes that the consultants engaged to review operations costs in other SunWater schemes Halcrow (2011), Arup (2011) and Aurecon (2011) also did not recommend any adjustment to operations costs) and SunWater's internal cost reductions over time, the Authority accepts SunWater's operations cost forecast.

Item 2: Preventive Maintenance

Stakeholder Submissions

SunWater

Preventive maintenance is defined 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 on 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 preventive maintenance costs are set out in Table 5.6 above.

Other Stakeholders

No other stakeholders commented on this item.

Authority Analysis

Consultant's Review

Although GHD commented that the proposed 70%/30% split between preventive and corrective maintenance appeared reasonable, GHD were unable to assess the appropriateness of forecast expenditure.

Accordingly, GHD did not recommend any adjustments to SunWater's preventive maintenance costs.

SunWater's Response

SunWater did not provide a response to GHD's review of this item.

Conclusion

The Authority notes that GHD did not recommend any adjustments to SunWater's preventive maintenance costs. The Authority also notes that the consultants engaged to review preventive maintenance costs in other SunWater schemes (Halcrow (2011), Arup (2011) and Aurecon (2011)) also did not recommend any adjustments.

Item 3: Corrective Maintenance

Stakeholder Submissions

SunWater

SunWater submit that even with sound preventive maintenance practices, unexpected failures can occur or other incidents can arise that require reactive corrective maintenance. While these incidences are difficult to forecast with accuracy, history has shown that such events are to be expected and need to be factored into expenditure forecasts. There are two types of corrective maintenance activities:

(a) emergency breakdown maintenance – 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 – 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 advises that it has made provision for 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. The corrective maintenance forecast exclude costs of damage arising from events covered by SunWater's insurance.

SunWater's proposed corrective maintenance costs are set out in Table 5.6 above.

Other Stakeholders

No stakeholders made submissions regarding this item.

Authority Analysis

Consultant's Review

Although GHD commented that the proposed 70%/30% split between preventive and corrective maintenance appeared reasonable, GHD were unable to assess the appropriateness of forecast expenditure.

Accordingly, GHD did not recommend any adjustments to SunWater's corrective maintenance costs.

SunWater's Response

SunWater did not provide a response to GHD's review.

Conclusion

The Authority notes that GHD did not recommend any adjustments to SunWater's corrective maintenance costs. The Authority also notes that the consultants engaged to review corrective maintenance costs in other SunWater schemes (Halcrow (2011), Arup (2011) and Aurecon (2011)) also did not recommend any adjustments.

Item 4: Electricity

Stakeholder Submissions

SunWater

SunWater (2011a) submit that electricity costs relate to the electricity required for the operation of Leslie Dam and Yarramalong Pump Station. At Leslie Dam, electricity is required to operate the gates and to provide lighting and power to the site. Electricity is also required for the operation of Yarramalong Pump Station which diverts water to the North Branch system from Yarramalong Weir.

SunWater (2011k) also submit that electricity costs are essentially a function of volume pumped and the unit cost of pumping which are both largely beyond the control of SunWater.

SunWater initially proposed no real price increases for electricity in the Upper Condamine NSP on the basis that regulatory arrangements (such as a price review trigger or cost pass-through) would be implemented to accommodate any such increases. Accordingly, SunWater proposed that for the 2012-17 regulatory period, prices would increase in line with inflation.

Table 5.9 below outlines the average electricity cost per ML for projected deliveries in 2011-12 as presented in the NSP.

Table 5.9: SunWater's Forecast Electricity Cost[8] (Real $)

Estimated $/ML	*Forecast Water Use (ML/yr)*	*Forecast Cost*
$7.14	7,062	$50,403

Source: SunWater NSP (2011)

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. A further 10% adjustment in 2012-13 and 1% adjustment in 2015-16 are proposed in response to the introduction of the carbon tax and carbon trading, respectively. This resulted in a 20.5% escalation rate for 2012-13.

Table 5.10 below outlines the forecast costs and cost per ML, based on SunWater's revised thinking regarding the application of the BRCI and a tax on carbon.

[8] This forecast relates exclusively to water supplied to North Branch.

Table 5.10: SunWater's Forecast Electricity Cost[9] (Nominal $)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Forecast Cost	$54,000	$58,000	$62,000	$68,000	$73,000
Estimated $/ML	$7.65	$8.21	$8.78	$9.63	$10.34

Source: SunWater (2011 Electricity Cost-Re-forecast).

In addition, SunWater (2011j) submits that currently all electricity for bulk water and distribution systems is procured from Ergon Energy under Franchise Tariffs. SunWater has argued that the variable nature of power usage associated with the supply of irrigation water means that it is not feasible to purchase electricity from the contestable market.

SunWater also review this arrangement periodically in response to developments regarding Franchise Tariffs and prices in the contestable market.

SunWater also submit that there are a range of issues that feature in any proposed move away from Franchise Tariffs, including:

(a) any proposed change to the contestable market is irreversible, hence any gains must be sustainable over the longer-term; and

(b) prices available under a contestable market are influenced by a range of factors, including the nature of electricity load with retailers tending to prefer customers with consistent demand with more competitive prices offered accordingly.

In addition, Franchise Tariffs have a small fixed charge that is consistent regardless of the level of demand. In contrast, tariffs that apply following a change to a contestable market are mostly demand-based with the cost of electricity being influenced by the maximum demands on the network. This demand charge, once incurred, is applied in subsequent months regardless of actual demand. SunWater maintains that Franchise Tariffs remain the most suitable given the variability experienced in pumping both within and between seasons.

Other Stakeholders

The participants at the Round 2 consultation considered that the cost of electricity has a significant consequence on pricing. They queried as to what options are available to move to more efficient electricity charges (i.e. contestable electricity contracts versus franchise electricity tariffs).

Authority's Analysis

The Authority notes that recent increases in electricity franchise tariffs as measured by the BRCI have been relatively high, and significant increases may continue in the short run due to factors such as the proposed implementation of a tax on carbon. However, the Authority considers that it is not certain that the scale of increases proposed by SunWater, or as seen in recent BRCI decisions, will continue for the next five years.

Instead of accepting SunWater's approach, a forward looking escalator drawn on the Authority's BRCI experience has been constructed as follows:

[9] This forecast relates exclusively to water supplied to North Branch.

(a) to reflect the impact of rising distribution and transmission costs (49% of total electricity costs), the Authority proposes to adopt the average increase implicit in the Australian Energy Regulator's (AER) price paths for distribution and transmission for 2011-15 (the AER increase in respect of 2010-11 will be excluded as it is already reflected in SunWater's costs);

(b) to reflect energy cost increases (41% of total electricity costs), the Authority proposes to adopt the average increase in energy costs over the past five years in the BRCI;

(c) to reflect retail operating cost increases (4% of total electricity costs), the Authority proposes to use the escalator applied in recent BRCI decisions, which reflects estimated wage increases (60%) and estimated consumer price index (CPI) (40%). In calculating this escalator, the Authority proposes to use wage increases of 4% per annum and CPI increases of 2.5% per annum; and

(d) to reflect the retail margin (5% of total electricity costs), the Authority proposes to use the weighted average of the other increases.

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 in legislation.

However, should SunWater sustain further material cost increases due to unanticipated electricity tariff rises over the regulatory period, the Authority proposes to address this via cost past through(s) or end of period adjustment(s).

In addition, SunWater has argued that the variable nature of power usage associated with the supply of irrigation water means that it is not feasible to purchase electricity from the contestable market. The Authority's consultant Halcrow (2011) accepted that this is likely to be the case.

SunWater's supplemental submission (2011ak) illustrated it has carried out a sufficiently detailed review of the costs and benefits associated with a move to contestable electricity contracts. As outlined in Volume 1, the Authority accepts that currently there is insufficient incentive for SunWater to move to contestable contracts for electricity. However, the Authority notes that impacts of the proposed carbon tax and possible tariff restructure emanating from a current review of Queensland's electricity tariffs may result in significant changes to the costs and benefits associated with the continued reliance of franchise tariffs. Therefore, the Authority recommends SunWater review the cost differential between franchise and contestable electricity contracts on an annual basis.

Conclusion

The Authority notes the initial and subsequent submissions made by SunWater and the views expressed by participants and Round 2 consultation. Accordingly, the Authority recommends that SunWater:

(a) adopts the Authority's forward looking escalator approach which excludes an allowance for carbon price impacts prior to being enacted by legislation. This figure is 7.41%; and

(b) reviews the cost differential between franchise and contestable electricity contracts on an annual basis and reports to stakeholders on the success (or otherwise) of its energy efficiency measures with these measures having been quantified; and

(c) adopt a cost pass through or end-of-period adjustment to accommodate material unanticipated cost increases associated with electricity.

Item 6: Cost Escalation

As noted in Volume 1, as part of their assessment of the prudency and efficiency of SunWater's operating costs, the Authority's operating cost consultants across all schemes were required to examine the appropriateness of SunWater's proposed cost escalation methods.

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.

Direct Electricity

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.

SunWater subsequently proposed to escalate electricity prices by 10.5% per annum over the regulatory period reflecting the average in the 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.

As 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.

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 Upper Condamine WSS is set out below in Table 5.11.

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 5.11: 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	311	312	312	313	313	301	302	303	304	304
Preventive maintenance	60	60	60	60	60	58	58	59	59	59
Corrective maintenance	39	39	40	40	40	38	38	38	39	39
Electricity	60	64	69	76	81	51	53	55	58	60
Total	**469**	**476**	**481**	**488**	**494**	**448**	**452**	**455**	**459**	**462**

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).

5.5 Cost Allocation According to WAE Priority

It is necessary to establish a methodology to allocate operating costs to the differing priority groups of WAE.

Previous Review

For the 2006-11 price paths, all costs were apportioned between medium and high priority customers according to WPCFs in both bulk and distribution systems.

Stakeholder Submissions

SunWater

SunWater (2011j) has proposed to assign operating costs to users on the basis of their current WAE, except for non-direct costs allocated to renewals (on the basis of DLC) which are to be allocated to priority groups using HUFs.

Other Stakeholders

No other stakeholders made submissions regarding this item.

Authority's Analysis

In Volume 1, the Authority has summarised the views of its consultants and has recommended that, in relation to bulk schemes:

(a) variable costs be allocated to medium and high priority WAE on the basis of water use;

(b) fixed preventive and corrective maintenance costs be allocated to medium and high priority WAE using HUFs; and

(c) for fixed operations costs, 50% be allocated using HUFs and 50% using current nominal WAEs.

The Authority recommends that within bulk service contracts, insurance premiums are allocated between medium and high priority customers on the basis of HUFs.

The effect for the Upper Condamine WSS is detailed in the following chapter (as it takes into account other factors relevant to establishing total costs).

5.6 Summary of Operating Costs

SunWater's proposed operating costs by activity and type are set out in Table 5.13. The Authority's recommended operating costs are set out in Table 5.14.

Table 5.13: SunWater's Proposed Operating Costs (Real $'000)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations					
Labour	181	181	181	181	181
Materials	17	17	17	18	18
Contractors	18	18	18	18	18
Other	95	96	95	95	96
Non-direct	378	394	383	366	360
Preventive Maintenance					
Labour	56	56	56	56	56
Materials	3	3	3	3	3
Contractors	1	1	1	1	1
Other	0	0	0	0	0
Non-direct	114	119	116	111	109
Corrective Maintenance					
Labour	15	15	15	15	15
Materials	13	14	14	14	14
Contractors	10	10	11	11	11
Other	0	0	0	0	0
Non-direct	33	34	33	32	31
Electricity	60	64	69	76	81
Total	**995**	**1,023**	**1,013**	**997**	**995**

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

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations					
Labour	176	177	178	179	180
Materials	16	17	17	17	17
Contractors	17	17	17	17	17
Other	92	92	91	90	90
Non-direct	368	378	362	340	329
Preventive Maintenance					
Labour	54	54	55	55	55
Materials	3	3	3	3	3
Contractors	1	1	1	1	1
Other	0	0	0	0	0
Non-direct	111	114	109	103	99
Corrective Maintenance					
Labour	15	15	15	15	15
Materials	13	13	13	13	13
Contractors	10	10	10	10	10
Other	0	0	0	0	0
Non-direct	32	33	31	30	29
Electricity	51	53	55	58	60
Total	**960**	**977**	**957**	**932**	**919**

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 2007-08, and were increased by CPI 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 Upper Condamine WSS 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 Upper Condamine (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	1,177	1,407	1,178	970	1,453	1,659	1,716	1,736	1,717	1,703	1,700
Renewals Annuity	186	221	213	129	209	724	727	718	710	711	711
Operating Costs	993	1,191	971	849	1,249	940	995	1,023	1,013	997	995
Revenue offsets	-1	-5	-7	-8	-6	-6	-6	-6	-6	-6	-6
Authority's Total Costs	-	-	-	-	-	-	1,493	1,501	1,475	1,456	1,435
Renewals Annuity	-	-	-	-	-	-	538	529	523	529	521
Operating Costs	-	-	-	-	-	-	960	977	957	932	919
Revenue offsets	-	-	-	-	-	-	-6	-6	-6	-6	-6
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: SunWater (2011ap) and 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 Upper Condamine WSS 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 bulk schemes, Indec considered 93% of costs would be fixed and 7% variable. However Indec proposed that scheme-specific tariff structures should be applied to reflect the relevant scheme costs.

For Upper Condamine WSS, Indec recommended 91% of costs should be fixed and 9% variable under optimal management. The Authority notes that this ratio differs from the current tariff structure which reflects the recovery of:

(a) Sandy Creek or Condamine River – 67% of costs in the fixed charge and 33% in the volumetric charge;

(b) North Branch - 70% of costs in the fixed charge and 30% in the volumetric charge; and

(c) North Branch (Risk A) - 100% 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	**1,326**	**1,336**	**1,314**	**1,297**	**1,280**
High Priority	942	946	932	925	914
Medium Priority	385	390	381	372	366

Note: Net fixed costs are net of revenue offsets and return on working capital. Source: SunWater (2011ap) and 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 using SunWater's forecast usage data, based on the eight year historical average water use 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 54.1% 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. These prices (Table 6.3) have not been adjusted to reflect the Queensland Government's pricing policies (see below).

Table 6.3: Medium Priority Prices for the Upper Condamine WSS ($/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*
River – North Branch											
Fixed (Part A)	25.24	27.56	30.56	32.04	33.00	34.20	13.33	13.67	14.01	14.36	14.72
Volumetric (Part B)	16.64	18.18	20.16	21.13	21.78	22.56	8.55	8.77	8.99	9.21	9.44
River – North Branch Risk A											
Fixed (Part A)	0.00	0.00	0.00	0.00	0.00	0.00	10.95	11.22	11.50	11.79	12.09
Volumetric (Part B)	19.16	22.36	23.76	24.51	25.26	26.16	8.55	8.77	8.99	9.21	9.44
River – Sandy Creek/Condamine											
Fixed (Part A)	18.84	19.40	20.32	20.96	21.60	22.36	13.33	13.67	14.01	14.36	14.72
Volumetric (Part B)	14.41	14.83	15.54	16.03	16.51	17.11	4.64	4.76	4.88	5.00	5.13

Source: Actual Prices (SunWater, 2011al) and Recommended 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 arising from 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 (see Table 6.4).

For this scheme, current revenues in the North Branch and Sandy Creek/Condamine River tariff groups are above the level required to recover prudent and efficient costs (Table 6.4). Therefore, the Authority is required to recommended prices that maintain revenues in real terms for the 2012-17 regulatory period for these tariff groups.

For the North Branch Risk A tariff group, revenues are below the level required to achieve cost recovery. In Volume 1, the Authority noted that, following tariff rebalancing, fixed charges should increase by $2/ML per annum in real terms until cost recovery is achieved. This is consistent with the pace of increase in 2006-11 prices. Volumetric charges are to reflect variable costs from 2012-13.

Therefore, for the North Branch Risk A tariff group, the Authority recommends fixed charges should increase by $2/ML in real terms until cost reflective charges are achieved in 2014-15, and remain constant in real terms thereafter. After tariff restructuring, the revenue-neutral tariff for this tariff group is a Part A charge of $5.28 per WAE and Part B of $7.18 per ML with the $2/ML real increase being applied to the fixed charge.

Table 6.4: Comparison of Current Prices and Cost-Reflective Prices

Tariff and Priority Group	***2010-11 Prices $/ML (indexed to 2012-13)***		***Irrigation WAE (ML)***	***Irrigation Water Use (ML)***	***Current Revenue***	***Revenue from Cost-Reflective Tariffs***	***Difference***
	Fixed	*Variable*					
North Branch	$34.67	$22.88	7,155	1,959	$292,905	$112,158	$180,747
North Branch – Risk A	-	$26.54	7,320	2,004	$53,181	$97,296	-$44,115
Sandy Creek/Condamine River	$22.69	$17.35	15,887	4,349	$435,968	$232,015	$203,953

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

6.8 The Authority's Recommended Prices

The Authority's recommended prices to apply to the Upper Condamine WSS for 2012-17 are outlined in Table 6.5 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 6.4: Draft Prices for the Upper Condamine WSS ($/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*
River – North Branch											
Fixed (Part A)	25.24	27.56	30.56	32.04	33.00	34.20	38.51	39.48	40.46	41.48	42.51
Volumetric (Part B)	16.64	18.18	20.16	21.13	21.78	22.56	8.55	8.77	8.99	9.21	9.44
River – North Branch Risk A											
Fixed (Part A)	0.00	0.00	0.00	0.00	0.00	0.00	6.90	9 12	11.45	11.79	12.09
Volumetric (Part B)	19.16	22.36	23.76	24.51	25.26	26.16	8.55	8.77	8.99	9.21	9.44
River – Sandy Creek/Condamine											
Fixed (Part A)	18.84	19.40	20.32	20.96	21.60	22.36	26.13	26.78	27.45	28.14	28.84
Volumetric (Part B)	14.41	14.83	15.54	16.03	16.51	17.11	4.64	4.76	4.88	5.00	5.13

Source: Actual Prices (SunWater, 2011al) 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)*
Cecil Plains Weir	2023-24	Replace Gauging Station 422353 Yarramalong	36
	2028-29	Replace Gauging Station 422340A Talgai Weir	36
		Replace Gauging Station 422349A Lemon Tree Weir	36
	2029-30	10UCO18 INSTALL FLOATING WARNING SIGNAGE	24
Lemon Tree Weir	2011-12	Sandblast,paint gate and replace seals	24
	2024-25	Replace Actuator, Rotork	20
	2029-30	10UCO15INSTALL FLOATING WARNING SIGNAGE	24
	2030-31	Replace Trash Racks	25
	2031-32	Sandblast,paint gate and replace seals	25
	2034-35	Replace Control Equipment	31
Leslie Dam	2011-12	Repair pitting and corrosion of conduit lining	119
		Refurbish: Paint upstream face	63
		INVESTIGATION CONTAMINATED LAND SITES	56
		Repair, blast and repaint cast iron bellmouth	48
		12UCOXX INSTALL ANCHORED BOUYS	46
		Replace Recorder	35
		12UCOXX TRASH RACKS REFURB	12
	2012-13	09UCO-Refurbish: Paint upstream face	65
		13UCOXX REFURBISH: PAINT UPSTREAM FACE	53
		09UCO-Refurbish: Install roof over hose	37
		Refurbish: sand blasting & re-galvanizing (racks were galvanized in 1994)	33
		13UCOXX RESURFACE / RESEAL ROADS	22
		13UCOXX REFURB/ PAINTING AND NEW SEALS	19
	2013-14	Refurbish: Paint upstream face	67
		14UCOXX REFURB UNLINED 685MM M/S PIPE	56
		09UCO-5 Yearly Dam Safety Inspection	52
		Clean and recoat corroded areas on valve	25
		Clean and recoat corrosion on valve	25
		Clean and paint valve (internal and external)	19
		14UCOXX STUDY:REFURB ALL CABLES & CBLWYS	13
		clean and recoat internal surfaces and associated valves	13
		Clean and recost internal pipe surfaces and associated valvework	13
		14UCOXX REFURB - REPLACE THE MOTOR	10
	2014-15	Replace Valve, 685Mm Gate John	119
		Repaint downstream face of gate	75
		10UCO11REFURBISH FOUNDATION DRAINS	51
		Replace Control Cubicles (2 Off)	27
		Study: 5yr Dam Comprehensive Inspection (Review of EAP, O&M & SOPs)	25
		Refurbish River Outlet Bulkhead Guides below EL460	13
		Refurbishment of valve & linkages (hence 100 yr life expected)	13
	2015-16	Replace Water Treatment	175
		Paint downstream face of gate	75
		Repaint downstream face of gate	75
		Replace Monorail Crane 2 T (River Outlet)	37
		Replace Gauging Station 422315B Leslie Dam Hw	36
		09UCO-Refurbish gantry hoist & crane wir	29
		Investigate and design new switchboards	25

Asset	*Year*	*Description*	*Value ($'000)*
	2016-17	Replace switchboards as per design 2012	254
		Replace Plc, Sqd (24 Off)	120
		Repaint downstream face of gate	74
		Replace Standby Hydraulic System	53
		Replace Ups, 24V Knife Junger	35
		Replace Lightning/Surge Protection	28
		Replace Battery, 307Ah Nife (20 Off)	20
	2017-18	Repaint downstream face of gate	223
	2018-19	Replace Cableways	1,704
		Study: 20yr Dam Safety Review (by 1 Jun 2019)	124
		09UCO-5 Yearly Dam Safety Inspection	50
		Refurbish: sand blasting & re-galvanizing (racks were galvanized in 1994)	33
	2019-20	Replace Switchboard	456
		Replace Cable	357
		Replace Control Equipment	225
		10UCO11REFURBISH FOUNDATION DRAINS	51
		Study: 5yr Dam Comprehensive Inspection (Review of EAP, O&M & SOPs)	25
		Replace Lookout	18
		10Y CRANE INSPECTION - as per AS2550	12
	2020-21	Replace Cable	871
		Refurbish: Painting and reseal gates (4 off)-actual costs	66
		Replace Monorail Crane 750Kg (Town Water)	29
		11UCOXX 10 year inspection gantry crane	27
	2021-22	09UCO-Refurb: Refurbish no1 cone valve	48
		Replace Battery, 307Ah Nife (20 Off)	20
		Refurbish: Replace bulkhead guides	19
		CANCELLLED DO NOT USE	13
		12UCOXX TRASH RACKS REFURB	12
	2022-23	Refurbish: Replace bulkhead guides - actual costs	48
		09UCO-Refurbish gantry hoist & crane wir	28
	2023-24	09UCO-5 Yearly Dam Safety Inspection	49
	2024-25	Refurbish: Paint upstream face	65
		10UCO11REFURBISH FOUNDATION DRAINS	50
		Refurbish: sand blasting & re-galvanizing (racks were galvanized in 1994)	33
		Study: 5yr Dam Comprehensive Inspection (Review of EAP, O&M & SOPs)	24
		10UCOXX RECONDITION VALVE & INT PIPEWORK	23
		13UCOXX RESURFACE / RESEAL ROADS	23
		Replace Outlet Conduit L	21
		Replace Survey Points	13
		09UCO-REFURB: WTP Raw Water Pumps - SWB	13
	2025-26	Replace Trash Racks	61
		11UCOXX Clean and paint corroded areas	23
		11UCOXX replace fastners and linkages	10
	2026-27	Refurbish: Blast and paint the LHS 914 mm river conduits as identified in 5-yearly dam safety (2004)	74
		Refurbish: Paint upstream face	65
		Replace Recorder	36
		Replace Battery, 307Ah Nife (20 Off)	20
		Replace Instrumentation	12
	2027-28	Refurbish: Blast & paint the RHS 914 mm river conduits as indentified in 5 yearly dam safety (2004)	31

Asset	*Year*	*Description*	*Value ($'000)*
		Refurbishment of valve & linkages (hence 100 yr life expected)	12
	2028-29	Replace Safety Fencing (Disch Ch.)	51
		09UCO-5 Yearly Dam Safety Inspection	49
		Replace Lightning/Surge Protection	28
		Clean and paint valve (internal and external)	18
		09UCO-REPLACE: Gallery Lighting and Inst	18
		clean and recoat internal surfaces and associated valves	12
		Clean and recost internal pipe surfaces and associated valvework	12
	2029-30	Refurbish: Paint upstream face	65
		10UCO11REFURBISH FOUNDATION DRAINS	50
		09UCO-Refurbish gantry hoist & crane wir	28
		Study: 5yr Dam Comprehensive Inspection (Review of EAP, O&M & SOPs)	24
		10Y CRANE INSPECTION - as per AS2550	12
		10UCO10REPAIR CORROSION	10
	2030-31	11UCO-Refurbish: replacement of ram seal	53
		11UCO01REFURB: PAINT UPSTREAM FACE-GT05	49
		Refurbish: sand blasting & re-galvanizing (racks were galvanized in 1994)	33
		11UCOXX 10 year inspection gantry crane	27
		11UCOXX REFURB PAINT NONGALVINIZED PARTS	18
	2031-32	Replace Alternator, 150Kva	292
		Replace Alternator, 22Kva	127
		Replace Alternator, 37.5Kva	119
		Replace Plc, Sqd (24 Off)	118
		Clean and recoat corroded areas on valve	25
		Clean and recoat corrosion on valve	25
		Replace Battery, 307Ah Nife (20 Off)	20
		Replace Left Bank D/S Boundary Fence	17
		14UCOXX STUDY:REFURB ALL CABLES & CBLWYS	13
		12UCOXX TRASH RACKS REFURB	12
	2032-33	09UCO-Refurbish: Paint upstream face	67
		13UCOXX REFURBISH: PAINT UPSTREAM FACE	54
		13UCOXX REFURB/ PAINTING AND NEW SEALS	18
		Replace Left Bank Car Park Fence Sandy Creek	16
		Replace Scenic Lookout Fence	11
	2033-34	Enhancce: Upgrage Water Treatment Plant	74
		Refurbish: Paint upstream face	65
		09UCO-5 Yearly Dam Safety Inspection	49
	2034-35	Replace Control Equipment	224
		Repaint downstream face of gate	74
		10UCO11REFURBISH FOUNDATION DRAINS	50
		09UCO-Refurb: Refurbish no1 cone valve	48
		Study: 5yr Dam Comprehensive Inspection (Review of EAP, O&M & SOPs)	25
		CANCELLLED DO NOT USE	13
		Refurbish River Outlet Bulkhead Guides below EL460	12
	2035-36	Paint downstream face of gate	74
		Repaint downstream face of gate	74
		Replace Stairway, Ladders, Kickboards & Platform	23
Leslie Dam Wtp	2015-16	Install Water Clarifier for the new TWS	12
	2017-18	Refurbish TWS pipework	12
	2020-21	Replace Treatment Plant Unit	154
	2035-36	Replace Transfer Pump Shed & Chemical Storage	18
Melrose Weir	2016-17	Replace Outlet Gate	13

Asset	*Year*	*Description*	*Value ($'000)*
	2028-29	Replace Trash Rack	29
Nangwee Weir	2011-12	12COXX DESILT NORTH BRANCH	21
	2016-17	12COXX DESILT NORTH BRANCH	22
		Replace Outlet Gate	13
	2021-22	12COXX DESILT NORTH BRANCH	22
	2026-27	12COXX DESILT NORTH BRANCH	22
	2028-29	Replace Access Road	55
	2031-32	12COXX DESILT NORTH BRANCH	22
Talgai Weir	2029-30	Replace Actuator, Mech	27
	2030-31	Replace Trash Racks	26
		11UCO06 INSTALL FLOATING WARNING SIGNS	26
		11UCOXX Service sandblast and paint gate	22
	2034-35	Replace Control Equipment	31
Wando Weir	2018-19	10UCO33 REGRADE ROAD	13
	2023-24	Replace Gate, 1200Mm Batescrew Slide	17
	2027-28	10UCO33 REGRADE ROAD	13
	2030-31	Replace Trash Racks	29
Yarramalong Pump Station	2011-12	Refurbish: Yarramalong Pump Station - Refurbish Pump No3	53
		Replace Plc System	36
		Replace Sensor, Level End & Haus	11
	2013-14	14UCOXX REFURB TO PREVENT WATER INGRESS	17
		14UCOXX STUDY:REFURB ALL CABLES & CBLWYS	17
	2014-15	Replace Actuator, Rotork	14
		Refurbish: Pull out and patch / paint. At end of economic life ;replacement with aluminum trash rack	13
	2015-16	10UCO32 REFURBISH PUMP AND MOTOR	78
		Refurbish: Yarramalong Pump Station - Refurbish Pump No 2	56
		Investigate and design new switchboards	17
		11UCOXX REPLACE ROTORK ACTUATOR	12
	2016-17	Replace Elect - Switchboard	124
	2017-18	Refurbish: Yarramalong Pump Station - Refurbish Pump No3	56
		Refurbish: Pump at Yarramalong PS	49
	2020-21	Refurbish: Pull out and patch / paint. At end of economic life ;replacement with aluminum trash rack	12
	2021-22	Replace Elect - Cable	157
		10UCO32 REFURBISH PUMP AND MOTOR	78
		Refurbish: Yarramalong Pump Station - Refurbish Pump No 2	56
	2023-24	Refurbish: Yarramalong Pump Station - Refurbish Pump No3	56
	2024-25	Replace Plc System	37
		Replace Trash Racks	19
	2026-27	Refurbish: Pull out and patch / paint. At end of economic life ;replacement with aluminum trash rack	12
		Replace Sensor, Level End & Haus	11
	2027-28	10UCO32 REFURBISH PUMP AND MOTOR	77
		Refurbish: Yarramalong Pump Station - Refurbish Pump No 2	55
	2028-29	Replace Control Equipment	480
	2029-30	Replace Submersible Pump/Motor	810
		Replace Pump Column	177
		Refurbish: Yarramalong Pump Station - Refurbish Pump No3	55
		Replace Actuator, Rotork	13
	2030-31	11UCOXX REPLACE ROTORK ACTUATOR	12
	2032-33	Refurbish: Pump at Yarramalong PS	49
		Refurbish: Pull out and patch / paint. At end of economic life ;replacement with aluminum trash rack	12

Asset	*Year*	*Description*	*Value ($'000)*
	2033-34	10UCO32 REFURBISH PUMP AND MOTOR	77
		Refurbish: Yarramalong Pump Station - Refurbish Pump No 2	55
	2034-35	Replace Siphon Unit 3 (U/S Unit)	67
		Replace Siphon Unit 2 (Centre Unit)	67
		Replace Siphon Unit 1 (D/S Unit)	63
	2035-36	Refurbish: Yarramalong Pump Station - Refurbish Pump No3	55
Yarramalong Rising Main	2011-12	Replace Air Valve, 100Mm Dble Gk	12
	2031-32	Replace Air Valve, 100Mm Dble Gk	12
Yarramalong Weir	2013-14	14UCOXX REFURB:SHEET PILING IS WEARING	64
	2016-17	Replace Outlet Gate	70
	2017-18	Refurbish:Rock protection work required as per condition assessment - see photos; condition assessme	25
	2030-31	11UCOXX INSTALL FLOATING WARNING SIGNS	11