QUEENSLAND COMPETITION AUTHORITY

Draft Report

SunWater
Irrigation Price Review: 2012-17

Volume 2

Cunnamulla 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.

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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 Cunnamulla water supply scheme (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 Cunnamulla 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***
Fixed (Part A)	10.56	12.36	14.52	16.56	18.56	19.24	26.85	27.52	28.21	28.91	29.64
Volumetric (Part B)	8.23	9.63	11.31	12.91	14.47	14.99	2.75	2.82	2.89	2.97	3.04

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. CUNNAMULLA WATER SUPPLY SCHEME

1.1 Scheme Description

The Cunnamulla water supply scheme (WSS) is located near the town of Cunnamulla. An overview of the key characteristics of this WSS is provided in Table 1.1.

Table 1.1: Key Scheme Information for the Cunnamulla WSS

	Cunnamulla WSS
Business Centre	Toowoomba
Irrigation Uses of Water	Grapes, citrus, cotton and a variety of fodder crops
Urban Water Supplies	The town of Cunnamulla

Source: Synergies Economic Consulting (2010).

The Cunnamulla WSS has a total of 26 bulk customers. Medium and high priority water access entitlements (WAE) are outlined in Table 1.2.

Table 1.2: Water Access Entitlements

Customer Group	***Irrigation WAE (ML)***	***Total WAE (ML)***
Medium Priority	2,492	2,612
High Priority	0	0
Total	**2,492**	**2,612**

Source: SunWater (2011).

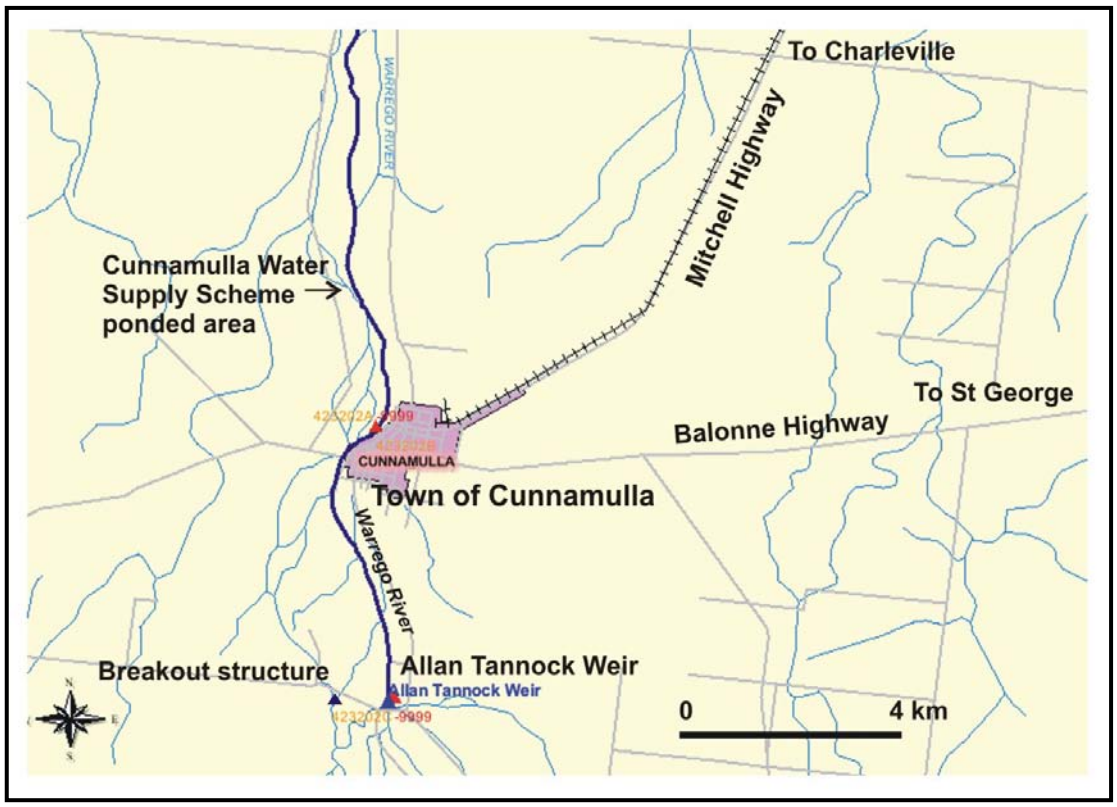
1.2 Bulk Water Infrastructure

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

The sole piece of infrastructure in the scheme is the Allan Tannock Weir, completed in 1991. The Allan Tannock Weir is a sheet piling and concrete construction with a fixed crest spillway located on the Warrego River with a full supply storage capacity of 4,770 ML (SunWater, 2011).

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

Figure 1.1: Cunnamulla WSS Locality Map



Source: SunWater (2011).

1.3 Network Service Plans

The Cunnamulla 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.

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

2. REGULATORY FRAMEWORK

2.1 Introduction

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

During the negotiations that preceded the 2006-11 price path, the Cunnamulla WSS Tier 2 group decided to adopt a revenue cap (SunWater, 2006b). Under this approach, a carry-over adjustment from the previous price path is to be made at the start of the regulatory period to correct for any under- or over-recovery of the cumulative Part B revenues. In the 2011-12 interim price period, the revenue 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 Cunnamulla WSS:

(a) possible developments driven by the Murray Darling Basin Plan that is currently being developed. This plan, or subsequent changes over time, may have cost implications for the scheme or change the underlying assumptions used for forecasting;

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

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

(d) metering costs related to changes in regulatory standards; and

(e) outbreak of noxious weeds.

Other Stakeholders

Participants at the Round 1 consultation (May 2010) considered that the scheme has a history of comparatively high reliability characterised by wide, deep river access above the weir. Participants also identified that the weir has been over-topping for several months.

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.

The transitional arrangements for the Cunnamulla WSS, in implementing a price cap regulatory arrangement, and the carry-over adjustment resulting from the revenue cap adopted in the 2006-11 price path, is addressed in a subsequent chapter.

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

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

Source: QCA (2011).

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

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

In response to participants at the Round 1 consultation, as Cunnamulla WSS is a scheme characterised by comparatively high reliability, the short-term volume (supply) risk to customers may be less significant than in other schemes. To the extent that any supply risk exists (see Volume 1), the Authority considers that SunWater does not have the ability to manage it, and that the current legislative arrangements and the Ministerial Direction requires customers to bear all efficient costs of supply. This risk is best managed by establishing a cost-reflective tariff structure that aligns with fixed and variable costs.

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. The Cunnamulla WSS Tier 2 group did not identify any changes to this arrangement and the Part A fixed charge was set at 70% and Part B variable charges at 30% of total revenues in this scheme.

Stakeholder Submissions

SunWater

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

Other Stakeholders

No other stakeholders have commented on this matter.

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.

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).

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

The volumes of permanent and temporary water traded for the Cunnamulla 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	0
Temporary water traded	421	165	259	974	898	843	826	470

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

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

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 Cunnamulla WSS, SunWater (2006b) assumed a water usage forecast of 55% of WAE in the Cunnamulla WSS.

Stakeholder Submissions

SunWater

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

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

SunWater's usage 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.

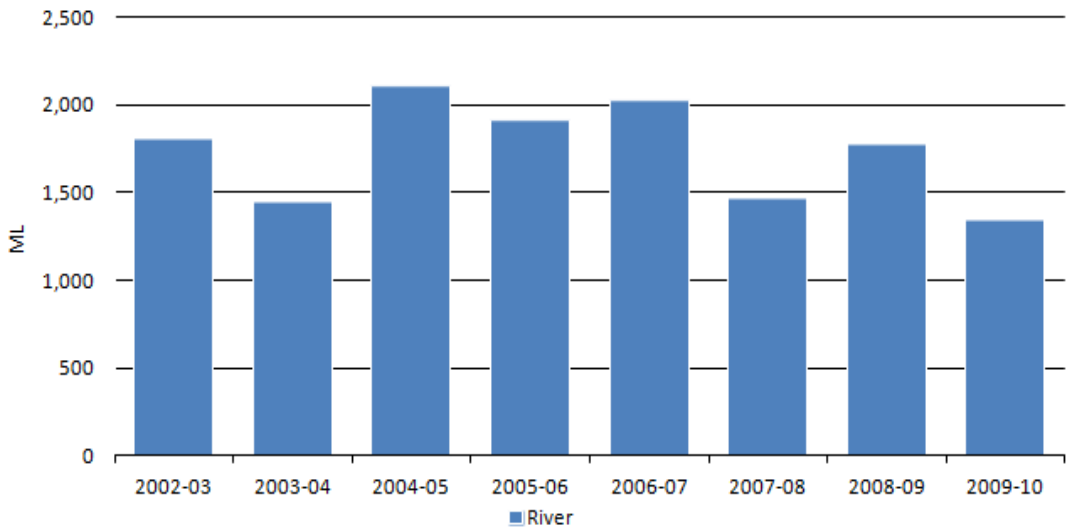
Based on the last eight years observations, SunWater has forecast use as follows:

(a) at a whole scheme level (all sectors) – an average of 66% of total WAE (including SunWater's WAE); and

(b) for the irrigation sector only – an average of 70% of irrigation WAE. This compares with the use assumption adopted in the 2006-11 price paths of 55% of WAE.

Figure 3.1 shows the historic usage information for the Cunnamulla 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 Cunnamulla WSS



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 SunWater Irrigation Price Paths Final Report 2006-11 nominated one tariff group, the River tariff group, for the Cunnamulla WSS (SunWater, 2006b).

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

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

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

  (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 and distribution renewals between medium and high priority WAEs; and

(d) the methodology to calculate the renewals annuity.

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

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

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

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

The Authority 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 Cunnamulla WSS was negative $44,000.

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.

Submissions

SunWater

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

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

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

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*
Past (Actual) Renewals Expenditure	1	-	23	-	10

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

Other Stakeholders

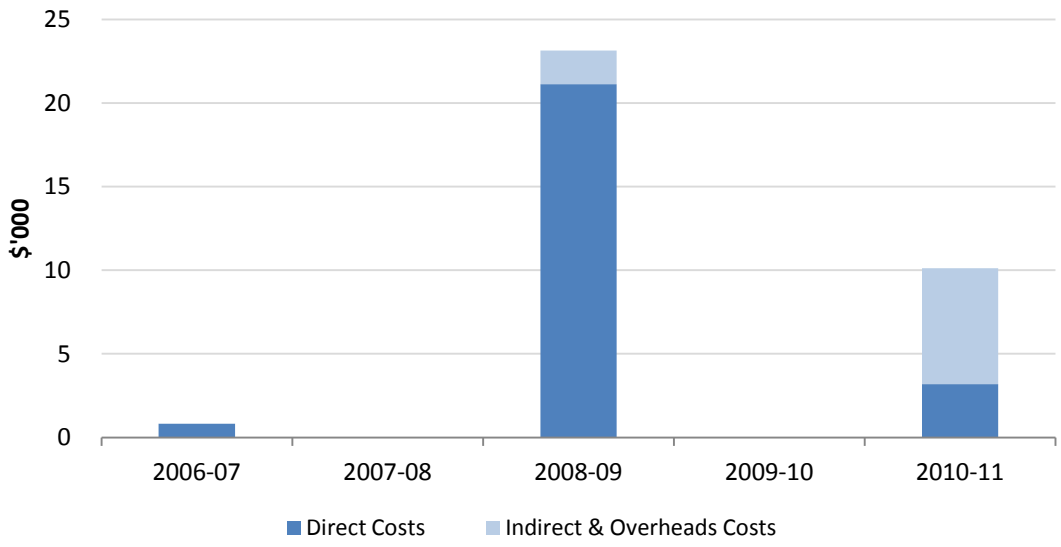
John Briggs (2011) and Geoff Dunsdon (2011) submitted that the actual expenditure on the Cunnamulla weir from the last price path was well below budgeted weir expenditure. They considered that the new price path budget must account for this previous large surplus and be adjusted accordingly.

Authority's Analysis

Total Renewals Expenditure

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

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



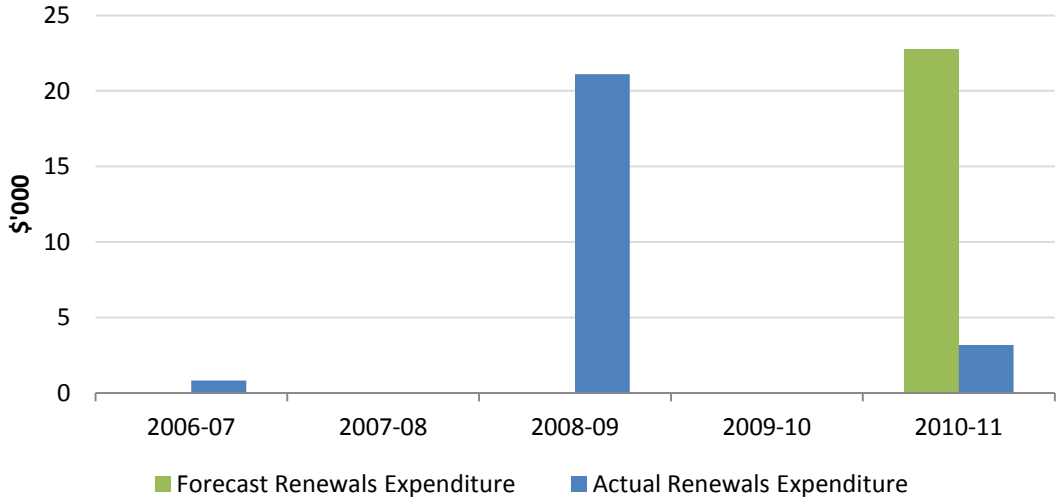
Source: Indec (2011d).

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 Cunnamulla WSS for 2006-11 is shown in Figure 4.2.

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



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

Actual renewals expenditure was approximately $2,000 (direct costs) above that 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 (at the time of GHD's review), GHD sought to identify variances between annually budgeted and actual expenditure for certain projects.

GHD reported that over the past five years SunWater has completed two projects, to refurbish the rock protection and install a buoy line on the Allan Tannock Weir. However, due to information deficiencies GHD was unable to conclude on the prudency and efficiency of past renewals expenditure.

Conclusion

The Authority notes GHD's finding that there was insufficient information to review the past renewals expenditure items for this scheme. As noted in Volume 1, the Authority has applied a 10% saving to non-sampled and sampled items for which there was insufficient information.

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

Table 4.2: Review of Past (Direct) Renewals Expenditure 2006-11 (Real $000)

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

Source: SunWater (2011), GHD (2011), SKM (2011) and QCA (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 $24,000 for the Cunnamulla WSS. This estimate reflects the most recent information provided by SunWater to the Authority in September 2011 and differs from the NSP.

Other Stakeholders

No other stakeholders have commented on this matter.

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 the Cunnamulla WSS is negative $21,000.

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

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

(b) adding 2006-2011 renewals annuity revenue;

(c) subtracting 2006-2011 renewals expenditure; and

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

To establish the closing ARR balance as at 30 June 2012 of negative $17,000 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.

4.5 Forecast Renewals Expenditure

Planning Methodology

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

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

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

Prudency and Efficiency of Forecast Renewals Expenditure

Submissions

SunWater

SunWater's proposed 2011-16 renewals expenditure for the Cunnamulla WSS in real (2011 dollar) terms is presented in Table 4.3 as provided in its NSP (submitted prior to the Government's announced interim prices for 2011-12).

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

Facility	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*
Allan Tannock Weir	-	-	19	-	25
Total	**-**	**-**	**19**	**-**	**25**

Source: SunWater (2011).

The major item incorporated in the above estimates is the correction of erosion damage to the wall of Allan Tannock Weir at an estimated cost of $19,000 in 2013-14.

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

Other Stakeholders

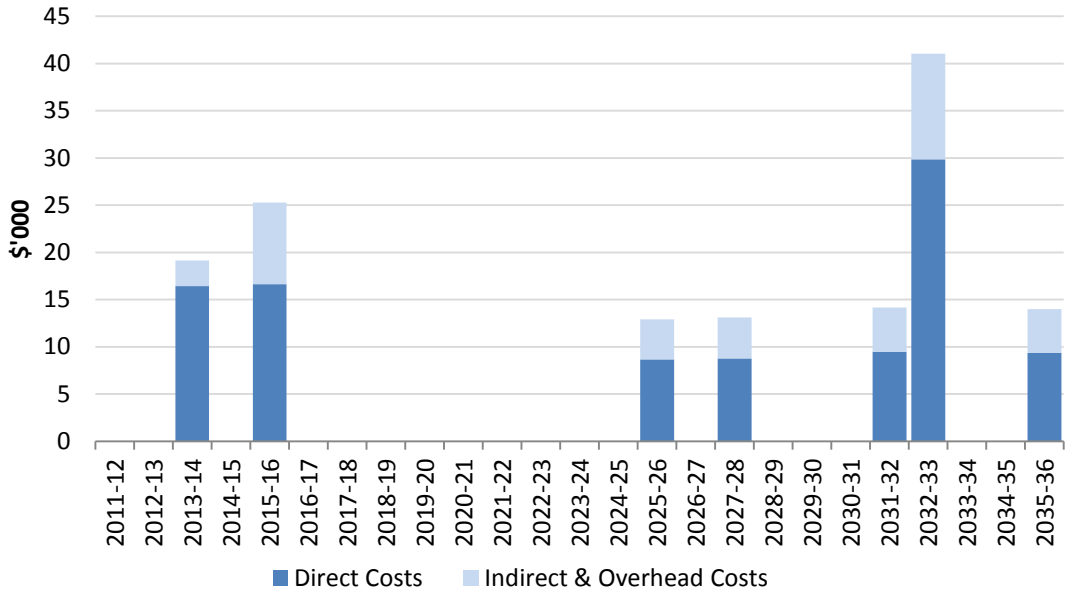
John Briggs (2011) and Geoff Dunsdon (2011) considered that SunWater's timeframe for replacement of the Cunnamulla weir is too short. They further submitted that it is a small, low maintenance weir that should have a much longer cost-recovery life span before refurbishment and replacement.

Authority's Analysis

Total Costs

SunWater's proposed renewals expenditure for 2011-36 for the Cunnamulla WSS in real (2010-11 dollar) terms is shown in Figure 4.3. This reflects the most recent 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. The indirect and overheads component of expenditure relating to these projects are further reviewed in Chapter 5 – Operating Costs.

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



Source: SunWater (2011am).

Item Review

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 Authority also requested that SKM review an additional item. The assessed future renewals projects are discussed below.

Item 1: Allan Tannock Weir Renewals Projects 2011-12 to 2015-16

SunWater

SunWater proposed the following renewal projects for the Allan Tannock Weir (Table 4.4).

Table 4.4: Allan Tannock Weir Renewals Expenditure 2011-12 to 2015-16 (Real $ '000)

Facility	*Description*	*Driver*	*2013-14*	*2015-16*
Allan Tannock Weir	10CUWXX REPAIR EROSION AT WALL	Condition	18.65	
Allan Tannock Weir	Refurbish: Repair or Replace Aluminium Rack	Condition		12.29
Allan Tannock Weir	Refurbish: Sluice Gate	Condition		12.29

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

Other Stakeholders

No other stakeholders have commented on these items.

GHD's Review

GHD stated that these projects have been supported with condition appraisals that conclude that the works are required to preserve the assets.

GHD further noted that one of the 2015-16 projects was deferred from 2003-04 after a review of the condition and reassessment of priorities, and considered this an indication that SunWater is following the guidelines in the Asset Management documents. GHD also concluded that the timing of the works appears to be prudent.

GHD generally concluded that the forecast renewals expenditure was assessed as efficient and prudent.

Authority's Analysis

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

Item 2: Allan Tannock Weir Renewals Projects from 2015-16

SunWater

SunWater proposed a range of renewals project beyond 2015-16 (Table 4.5) in real (2010-11) terms.

Table 4.5: Allan Tannock Weir Renewals Expenditure Beyond 2015-16 (Real $ '000)

Facility	*Description*	*Year*	*Cost*
Allan Tannock Weir	Refurbish Sluice Gate	2025-26	12
Allan Tannock Weir	Repair or Replace Aluminium Rack	2027-28	12
Allan Tannock Weir	Replace Sluice Gate	2031-32	13
Allan Tannock Weir	Protection works	2032-33	36
Allan Tannock Weir	Refurbish Sluice Gate	2035-36	12

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

Other Stakeholders

No other stakeholders have commented on these items.

GHD's Review

GHD noted that the significant expenditure beyond 2015-16 is for further refurbishment of the sluice gate and racks in 2025-26, 2027-28 and 2031-32 and further restoration of the weir in 2032-33.

GHD reviewed the refurbishment of the weir in 2032-33 in Systems, Applications and Products (SAP) Plant Maintenance (PM). The driver was the useful life of the asset, which predicts when the weir will need to be refurbished and the expenditure has been based on an order of cost estimate. Minimal details were available on the method of estimating the refurbishment cost. GHD considered that an assessment of the efficiency was not possible without a quantified scope of works or bill of materials.

Notwithstanding the above, GHD generally concluded that the forecast renewals expenditure was assessed as prudent and efficient.

Authority's Analysis

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

Item 3: Place rock and re-profile upstream batter of main wall Allan Tannock Weir

SunWater

The Allan Tannock Weir was constructed in 1991 as part of the original construction of the distribution system. SunWater has proposed expenditure of $18,650 (including indirect and overhead costs) for the refurbishment, i.e. placing and re-profiling of the upstream rock batter of the main wall, of the Allan Tannock Weir in 2013-14.

Other Stakeholders

No other stakeholders have commented on this item.

SKM's Review

(a) Available Information

SKM reviewed SunWater's Works Management System (WMS), and asset condition and risk assessment policy and procedures.

Table 4.6: Documentation Reviewed Specific to the Allan Tannock Weir Refurbishment

Document No.	*Document Name*	*Document Title*	*Date*
1108257	1108257 – v1A – Allan Tannock Weir Refurbishment	Cunnamulla Water Supply – Allan Tannock Weir – Place rock and re-profile upstream batter of main wall. (CUW-TANN-WALL)	8 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 renewals item replacement/refurbishment dates and costs.

SKM noted that for this renewals item, an incorrect object type has been allocated in SunWater's SAP-WMS. A sheet pile weir has a refurbishment period of 25 years. However, at the equipment level the object type is listed as EMBK which has no refurbishment life listed (and a standard run to failure asset life of 200 years).

SunWater has applied its risk evaluation method to this asset and has determined that the asset has a Production/Operations and Environmental risk with a major consequence rating (score 40). The consequence rating together with a probability (likelihood of occurrence) score of 3 results in an overall risk score of 120 which places this asset in a medium risk category. For this asset type, an overall risk category of Medium reduces the run to failure asset life from 75 years to 66 years and the refurbishment period from 25 years to 22 years.

SKM considered this reduction in run to failure asset life and refurbishment period based on this risk assessment for asset replacement/refurbishment planning purposes to be appropriate and in keeping with good industry practice.

The first refurbishment of this asset type is projected to be in 2012-13, based on its construction date and adjusted refurbishment period of 22 years.

A business case was prepared to undertake refurbishment after an inspection was conducted on 1 March 2006. The site inspection highlighted that the rock protection of the upstream batter had experienced undermining and that two major scour holes had formed downstream of the concrete apron. The business case recommended the work required to rectify the issues. There are no records linking any work executed directly to this business case.

The SAP-WMS records stated that in 2008-09, refurbishment and repair protection works (due to flood damage 2007-08) at a cost of $28,208 was undertaken. No cost breakdown of this amount has been provided by SunWater and the scope could not be ascertained. It cannot be established if any of the work identified in March 2006 was incorporated within this scope of works.

The latest condition assessment, as recorded in WMS for this asset, was undertaken in 2009. No correlation could be established between the condition assessment and the work undertaken in 2008-09 as described in the above paragraph. The maximum score, recorded in SAP-WMS,

is a 5 (major deterioration with minor refurbishment required to ensure ongoing reliable operation) assigned to General Concrete Condition with the following comment: Erosion at Upstream Batters Main Wall. This work has been scheduled for 2013-14 with the following description: Refurbish Place Rock and Profile Upstream Batter of Main Wall – Place Rock in Eroded Area downstream of wall. There are similarities between the work proposed for 2013-14 and the scope of works proposed in the business case prepared in March 2006.

SKM noted that the condition assessment interval is every year for this object type and not 10 years as the SunWater report, referenced above, indicates. This difference is ascribed to the object type being recorded incorrectly. In this respect SunWater has not conformed to the Asset Management procedures.

On the assumption that SunWater's procedures for condition assessment have been followed, based on this condition assessment score, SKM considered that the timing for refurbishment of this renewals item is prudent.

Options Evaluation

SKM considered that the proposed refurbishment operation of placing rock and re-profiling of the existing rock to the upstream batter of the main wall and placing rock to the eroded areas downstream is appropriate for this asset and no options evaluation is required. SunWater has advised that a similar solution to that used at Kolan Barrage could be used. The solution as recorded is as follows: Engineering Services undertook the refurbishment work – this entailed jack hammering the existing holes out so 'Block Fill' could be vibrated into the voids. SunWater advised that this is a Category 2[1] project and that the site hasn't been inspected recently to determine the scope and therefore the scope could potentially change.

Conclusion on Prudency Evaluation

In conclusion, SKM noted that based on the 2009 condition assessment and in accordance to SunWater's policies the refurbishment of the upstream batter protection and downstream scour infill is due at the date projected (2014). SKM therefore considered the timing of this replacement to be prudent.

(c) Efficiency Evaluation

The process used by SunWater to establish future renewals item replacements/refurbishments cost is detailed in Volume 1.

For asset refurbishment works where the planned refurbishment date is less than five years hence from the planning date, SunWater's Planning Team draw on actual costs for similar activities undertaken recently. Given the volume of renewals items that SunWater's planning team is engaged with at any point in time, SKM considered this approach to be reasonable and in accordance with good industry practice, where the management of a large portfolio of assets is concerned.

SKM were unable to develop bench mark costs for refurbishing the upstream embankment and infilling of the scoured downstream areas from first principles.

[1] Category 2 relates to SunWater's refurbishment prioritising process based on risk, that is consequence and probability of failure of an asset. Category 2 refurbishment works are programmed behind Category 1 works as they are determined to have a lower risk and consequence score that projects that are prioritised as Category 1.

However, SKM noted that SunWater has adopted a cost of $17,655[2] for the refurbishment cost which is based on the actual cost incurred by SunWater on a similar project at Kolan Barrage during the 2006-07 fiscal year. The following table, Table 4.7, captures the 2006-07 actual cost data, for the Kolan Barrage project and projects the 2011-12 costs by applying an indexation rate based on consumer price index (CPI)[3], it further shows the cost that SunWater has listed for the works proposed at Allan Tannock Weir.

Table 4.7: Comparison between Kolan Barrage and Allan Tannock Weir Cost in SAP

Cost Item	*Kolan Barrage Cost 2006-07 ($)*	*SKM Projected Cost 2011-12 ($)*	*SunWater Cost as listed in SAP ($)*
Contractors	5,549	6,377	7,475
Internal Labour	5,763	6,623	912
Internal Overhead	5,512	6,335	1,627
Materials	-	-	7,000
Plant Equipment Vehicles	320	368	-
Service Charges	634	729	783
Total	**17,779**	**20,432**	**17,796**

Source: SKM (2011).

From the table above (Table 4.7) it can be seen that the SKM projected cost is higher than what is recorded in the WMS. SKM have not had access to the scope of works for the 2006-07 refurbishment of Kolan Barrage and hence were not able to comment on the suitability of comparing the two.

SunWater has also supplied a list of materials, recorded in SAP WMS, that they deem will be required for the work as detailed in Table 4.8.

[2] The Authority notes that the total cost (including direct and indirect) submitted by SunWater for this renewals item ($18,650) does not equate to the amount reviewed by SKM ($17,655). This is because SKM's review was based on SunWater's SAP system, which uses a simplified method for calculating indirect and overhead costs than SunWater's financial system, which formed the basis of SunWater's NSPs and submissions to the Authority. However, where direct costs were reviewed by SKM this aligns with the direct costs submitted to the Authority.

[3] The projected cost is based on the CPI for Brisbane for the five-year period between June 2007 and June 2011. The accumulated indexation factor was calculated as 14.92%.

Table 4.8: List of Materials for Allan Tannock Weir Refurbishment

Description	*Quantity*	*Unit*	*SKM Rate ($)*	*Total ($)*
Excavator	30	hrs	150	4,500
Wire Mesh[1]	1		2,200	2,200
Rock[2]	40	m^3	400	16,000
Council Plant & Staff	25	hrs	100	2,500
Total				**25,200**

Note: 1: The rate is based on using SL92 mesh beneath the rock placed in a 300mm deep layer and using the rate for WS3B – Reinforcement Fabric Supply and Place at $2925.37/tonne. 2: The rate used is WS3J Concreted Rockfill at $399.15/$m^3$. Source: SKM (2011).

The total for materials and council plant/staff alone, excluding SunWater indirect and overhead costs as estimated by SKM, based on SunWater quantities for Allan Tannock Weir and shown in Table 4.8 above is 41% more than the total cost submitted by SunWater as the renewals item refurbishment value. SKM therefore concluded that the renewals expenditure submitted for Allan Tannock weir is understated.

SKM considered the costs submitted to the Authority for this renewals item to be efficient, based on the limited information at SKM's disposal. SKM noted that there may be merit in revisiting the cost of the project after the scope has been determined.

SunWater has developed a planning order for this renewals item replacement which details the following breakdown of costs between contractors, overheads and materials as is shown in Table 4.9.

Table 4.9: SunWater Breakdown of Costs – Allan Tannock Weir Refurbishment

Cost Item	*Planned Costs*
Contractors	$7,475
Internal Labour Transfer	$888
Internal Overhead Transfer	$1,644
Materials	$7,000
Service Charges	$648
Total	***$17,655***

Note: The Authority notes that SunWater's planning order for this item is 0.8% below the costs listed in the SAP. Source: SKM (2011).

SunWater advised that Internal Overhead Transfer relates to corporate overhead costs that are allocated to this renewals item replacement activity

(d) Summary and Conclusions

SKM was satisfied that the timing and need for refurbishment of this renewals item is prudent.

SKM considered the cost of the refurbishment to be efficient. There may be merit in revisiting the cost of the project once the scope has been determined.

Authority's Analysis

The Authority notes that the total cost (including direct and indirect) submitted by SunWater for this renewals item ($18,650) does not equate to the amount reviewed by SKM ($17,655). This is because SKM's review was based on SunWater's SAP system, which uses a simplified method for calculating indirect and overhead costs than SunWater's financial system, which formed the basis of SunWater's NSPs and submissions to the Authority. 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 prudent and efficient.

Conclusion

In summary, various projects for the Cunnamulla WSS were sampled. Of these:

(a) the Authority has applied a general 10% saving to renewals expenditure items for 2012-16;

(b) the Authority has applied a general 10% saving to renewals expenditure after 2015-16; and

(c) SKM was able to conduct a detailed review of refurbishment works at Allan Tannock Weir, which was found to be prudent and efficient.

As noted in Volume 1, 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 in Table 4.10.

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

	Item	*Year*	*SunWater*	*Authority's Findings*	*Recommended*
Sampled Projects					
1.	Allan Tannock Weir refurbishment	2013-14	18.65	Prudent and efficient	18.65
2.	Repair or Replace Aluminium Rack	2015-16	12.29		10% saving applied
3.	Refurbish Sluice Gate	2015-16	12.29		10% saving applied
4.	Refurbish Sluice Gate	2025-26	12		10% saving applied
5.	Repair or Replace Aluminium Rack	2027-28	12		10% saving applied
6.	Replace Sluice Gate	2031-32	13		10% saving applied
7.	Protection works	2032-33	36		10% saving applied
Non Sampled Projects					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 that customers and their representative groups had concerns about the lack of involvement in the planning of future renewals expenditure.

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

Given that the Cunnamulla WSS contains only medium priority WAEs, the allocation of headworks renewals costs according to WAE is not applicable in this scheme.

Accordingly, 100% of renewals costs will be apportioned to medium priority WAE.

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 Cunnamulla WSS the recommended renewals annuity for the 2012-17 regulatory period in real terms as at 2010-11 is shown in Table 4.11. The table shows the total renewals annuity recommended by the Authority. Also presented for comparison is SunWater's total renewals annuity for 2006-11 and SunWater's proposed total annuity for 2012-16.

Table 4.11: Cunnamulla WSS Renewals Annuity (Real $000)

	Actual						*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	17	16	15	14	14	9	9	10	10	9	9
Total Authority	-	-	-	-	-	-	5	6	6	6	6
High Priority	-	-	-	-	-	-	0	0	0	0	0
Medium Priority	-	-	-	-	-	-	5	6	6	6	6

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

5. OPERATING COSTS

5.1 Background

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 allocating operating costs to service contracts[4] 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 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 Service Manager and 10 staff are located at the St George depot and are responsible for the day-to-day water supply management and delivery of the programmed works for all users in the region;

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

(b) service provision relates to:

(i) water delivery – scheduling and releasing bulk water from storages, surveillance of water levels and flows in the river, and quarterly meter reading; and

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

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

(i) the ROP and Resource Operations Licence (ROL) – a major part of which is gathering and reporting 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 below);

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

Storage	***Monitoring requirements***			
	Inflow	***Head Water***	***Tail Water***	***BGA***
Allan Tannock Weir	No	Yes	Yes	Yes

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

(ii) dam safety routine inspections are carried out quarterly on the Allan Tannock Weir. This routine activity includes the inspection of the weir wall, the weir's abutment and adjacent embankments, the outlet works, the weir's apron and the condition of the breakout structure;

(iii) environmental management to comply with the ROP and *Environmental Protection Act 1994* which require SunWater to deal with risks such as fish deaths, chemical usage, pollution, contaminants and approvals for instream 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 activities to private operators or Government. SunWater noted that recreation facilities at Allan Tannock Weir are owned and managed by the Paroo Shire Council; and

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

Previous Review

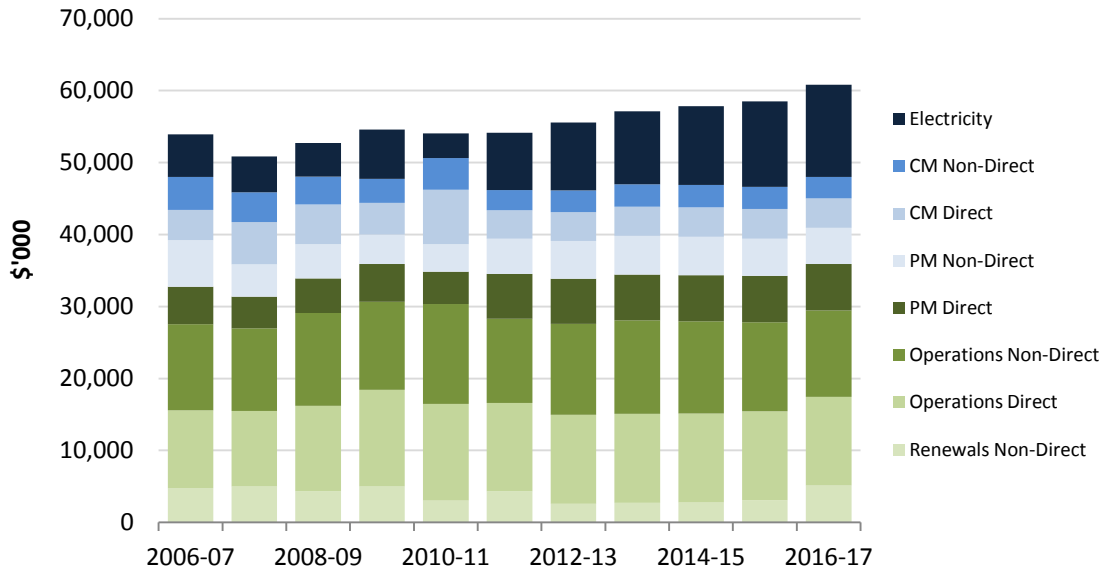
For the 2006-11 price paths, Indec identified annual cost savings of between $3.8 million and $5.5 million (2010-11 dollars) or 7.5% to 9.9% of total annual costs, which SunWater was to achieve during the 2006-11 price paths (SunWater, 2006a). See Volume 1.

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 in October 2011) and differ from SunWater's NSP as noted in Volume 1.

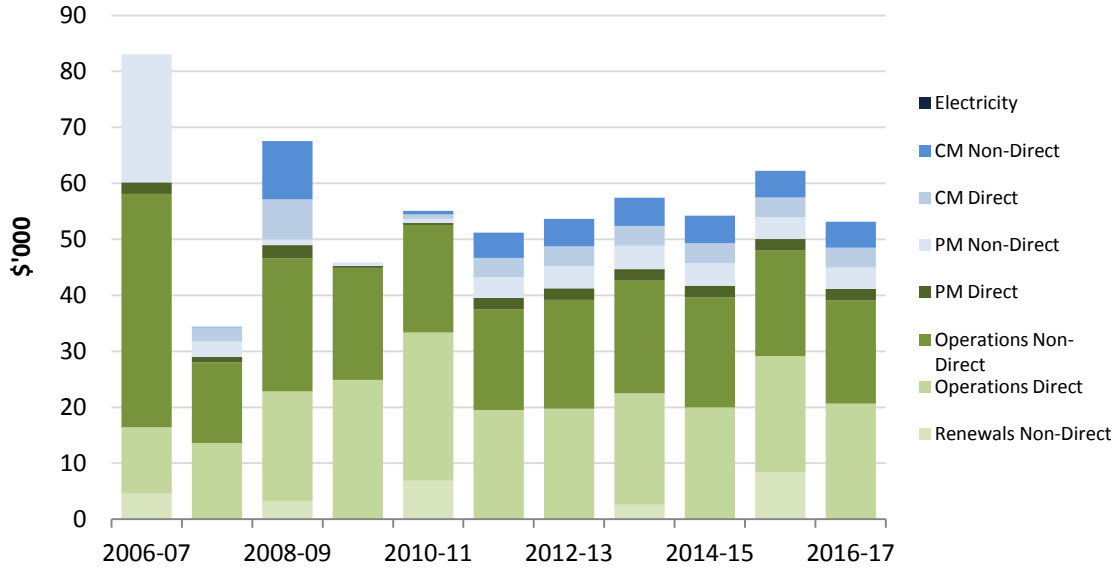
Figure 5.1: SunWater's Total Operating Costs (Real $'000) – All Service Contracts



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, 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 Cunnamulla WSS (all sectors) is shown in Figure 5.2 and Tables 5.1 and 5.2.

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



Note: Renewals direct costs are discussed in the previous chapter. Renewals non-direct costs are the non-direct operating costs allocated to renewals. Totals vary from NSP due to the inclusion of renewals non-direct costs, SunWater's revised approach to insurance, 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 5.2: 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	54	28	43	45	46	37	39	40	40	40	39
Electricity	0	0	0	0	0	0	0	0	0	0	0
Preventive maintenance	25	4	3	1	1	6	6	6	6	6	6
Corrective maintenance	0	3	18	0	1	8	8	9	8	8	8
Renewals non-direct	5	0	3	0	7	0	0	3	0	8	0
Total	**83**	**34**	**68**	**46**	**55**	**51**	**54**	**57**	**54**	**62**	**53**

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,exclusion of revenue offset (which is dealt with in the following chapter) and rounding. The estimates also reflect the most recent information provided by SunWater to the Authority in October 2011. Source: SunWater (2011ap).

Table 5.3: 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	6	6	15	11	9	14	14	14	14	14	14
Electricity	0	0	0	0	0	0	0	0	0	0	0
Contractors	3	5	8	8	7	5	5	5	5	5	5
Materials	1	2	2	2	0	4	4	4	4	4	4
Other	4	4	5	4	11	3	3	3	3	4	3
Non-direct	69	17	38	21	27	26	28	32	29	36	27
Total	**83**	**34**	**68**	**46**	**55**	**51**	**54**	**57**	**54**	**62**	**53**

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, exclusion of revenue offset (which is dealt with in the following chapter), and rounding. The estimates also reflect the most recent information provided by SunWater to the Authority in October 2011. Source: SunWater (2011ap).

In its NSP, SunWater submitted that the operating costs for this scheme averaged $54,000 per year over the period of the current price path. [Operating costs as defined in the NSP exclude the indirect and overhead costs allocated to renewals expenditure.] The projected efficient average operating costs in the NSP for 2011-16 are $48,000 per annum.

Other Stakeholders

John Briggs (2011) and Geoff Dunsdon (2011) both submitted that the irrigators would like to see a comprehensive cost allocation breakdown on their invoices just as they get from other suppliers.

Participants at the Round 2 consultation (March 2011) notified the Authority that a breakdown of individual costs on invoices, as opposed to a single amount, is preferred.

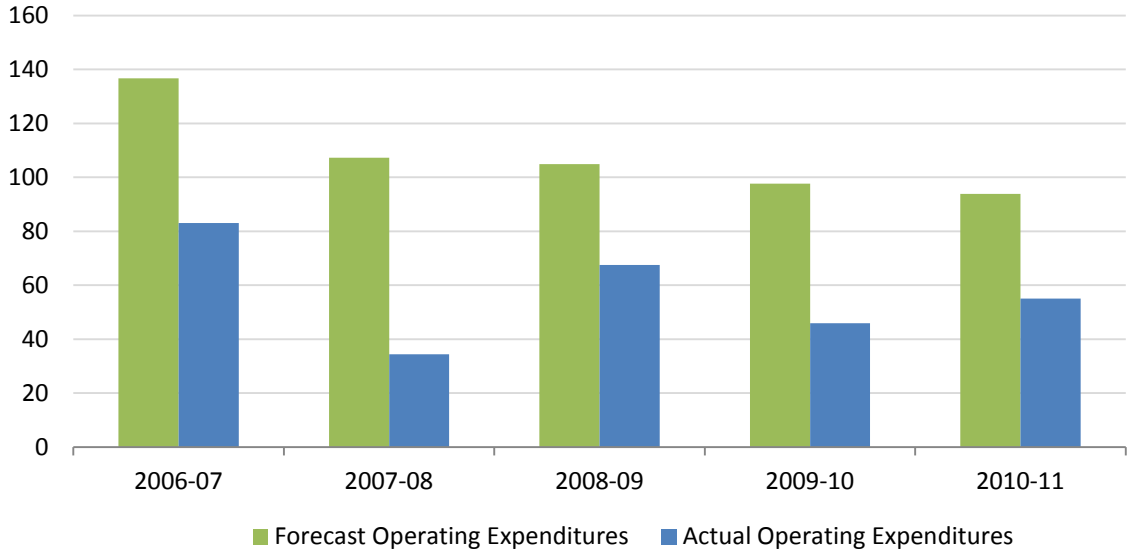
Authority's Analysis

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 notes 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 Cunnamulla WSS is shown in Figure 5.3 below. For this scheme, SunWater's actual operating costs were less than Indec's forecast efficient operating costs by $254,000 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 2011. It observed that further analysis would be required to justify and support such an inference (see Volume 1). The Authority has engaged other consultants to address potential scheme specific cost savings.

5.3 Non-Direct Costs

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 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 5.4). 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 Cunnamulla WSS are set out in Table 5.4 below.

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	25,152	23,770	23,512	24,244	24,055	23,708	25,089
Cunnamulla WSS	69	17	38	21	27	26	28	32	29	36	27

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 at the Round 2 consultation (March 2011) considered Allan Tannock Weir to be a basic, low cost structure. They considered that apportioning such large amounts of overhead costs is not justified.

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 Touche Tohmatsu (Deloitte) to review SunWater's non-direct costs. Deloitte carried out benchmarking to assess where potential efficiencies within SunWater may be achieved. Deloitte identified 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's non-direct costs were higher than those of SunWater as a percentage of total operating costs – but that there are differences between PVWater and SunWater which made the comparisons unreliable.[5]

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 $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).

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

[5] For example, PVWater have 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.

Table 5.5: Recommended Non-Direct Costs (Real $'000)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
SunWater	69	17	38	21	27	26	28	32	29	36	27
Authority							28	31	27	33	25

Source: SunWater (2011ap), QCA (2011).

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.

Table 5.6: 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	12	14	20	25	26	20	20	20	20	21	21
Electricity	0	0	0	0	0	0	0	0	0	0	0
Preventive maintenance	2	1	2	0	0	2	2	2	2	2	2
Corrective maintenance	0	2	7	0	1	3	4	4	4	4	4
Total	**14**	**17**	**29**	**25**	**28**	**25**	**25**	**25**	**26**	**26**	**26**

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

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Labour	6	6	15	11	9	14	14	14	14	14	14
Electricity	0	0	0	0	0	0	0	0	0	0	0
Contractors	3	5	8	8	7	5	5	5	5	5	5
Materials	1	2	2	2	0	4	4	4	4	4	4
Other	4	4	5	4	11	3	3	3	3	4	3
Total	**14**	**17**	**29**	**25**	**28**	**25**	**25**	**25**	**26**	**26**	**26**

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).

Authority's Analysis

The Authority engaged 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. GHD reported that sampling was not possible due to the level of aggregation in SunWater's SAP-WMS. GHD also reported that, where possible, 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 operational activity (other than maintenance) enabling water delivery, customer management, asset management planning, financial and ROP reporting, workplace health and safety compliance, and environmental and land management.

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

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

Other Stakeholders

John Briggs (2011) and Geoff Dunsdon (2011) submitted that the high running costs do not reflect the low cost nature of the Cunnamulla weir. They submitted that the weir is a very low maintenance barrage weir that has only one moving part, a release valve for environmental releases. In addition, there are no delivery channels and no delivery pumps and the handful of irrigators in the scheme all read and report their own meter readings to SunWater.

Participants at the Round 2 consultation considered Allan Tannock Weir to be a basic, low cost structure.

John Briggs and Geoff Dunsdon further submitted that the irrigators would like to have more input in reducing the running costs of the weir. As an example, they considered that it is a seven-hour round trip for someone from SunWater in St George to drive to Cunnamulla to do a five-minute job of turning the release valve on or off. They submitted that SunWater should arrange for someone from Cunnamulla to do this.

Participants at the Round 2 consultation also considered that investigating local irrigator involvement in maintaining the weir to reduce costs is warranted.

Authority Analysis

GHD's Review

GHD considered that given the expectations for compliance with Australian and Queensland Government regulation and initiatives, the management water allocations, corrective and preventive maintenance, are considered efficient. GHD stated that SunWater has forecast the required expenditure using the current cost requirements as the basis. Considering the regulatory requirements are unlikely to change, GHD advises that the management and administration costs of this scheme would be consistent with the actual expenditure incurred in

the current price period. Allowing for anomalies such as floods, GHD advised that the method for calculating the forecast using actual historical cost is considered robust.

GHD advised that efficiency gains for this scheme could be achieved with the implementation of electronic water ordering through Integrated Voice Recognition (IVR) or the SunWater Online solution. SunWater has indicated, when questioned, that customers in this scheme are not willing to pay for these services. Considering the low volumes allocated to this scheme, this is considered reasonable.

GHD did not recommend any adjustment to SunWater's proposed operations costs for this scheme.

SunWater's Response

SunWater submitted that the costs of implementing electronic water ordering systems are significant as they must be set up and tailored to each water supply scheme. SunWater does not believe the costs, given the small customer base, would be justified. SunWater further submitted that GHD did not provide any supporting data about the cost savings that would arise from implementing these systems to support their findings.

Conclusion

The Authority notes that GHD did not recommend any adjustment to costs, although GHD considered that electronic water ordering could result in efficiency gains. SunWater responded that the costs of doing so would not be justified for this scheme.

The Authority 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.

In response to stakeholder submissions concerning further irrigator involvement to reduce operation costs, the Authority notes that GHD made no recommendations in relation to potential cost savings associated with irrigator involvement.

In response to the suggestion made by John Briggs and Geoff Dunsdon that customers turn the release valve on, or off, to save SunWater the seven-hour trip, the ROP specifies that the ROL holder, in this case SunWater, must measure and record the release rate and the volume released from Allan Tannock Weir.

The Authority 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.

Item 2: Preventive and Corrective Maintenance

Stakeholder Submissions

SunWater

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

Preventive maintenance includes:

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

(b) servicing – planned maintenance activities normally expected to be carried out routinely 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 submitted that even with sound preventive maintenance practices, unexpected failures can still occur or other incidents can arise that require reactive corrective maintenance.

SunWater identifies two types of corrective maintenance activities:

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

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

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

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

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

Other Stakeholders

No other stakeholders have commented on these items.

Authority's Analysis

GHD's Review

GHD noted that preventive and corrective maintenance is forecast as a 40%/60% ratio. GHD advised that in normal circumstances this would be considered a poor ratio with preventive maintenance being insufficient. However, in this case as it is a five-hour round trip for SunWater personnel to travel to the scheme, GHD considered the ratio to be appropriate. GHD further considered that this is consistent with the requirements for weed management, compliance inspections and reactive responses as required. In discussions with SunWater Regional Management during the site inspections, SunWater confirmed to GHD that consolidation of activity is achieved where possible for the non-staffed schemes. Preventive maintenance and inspections are programmed to coincide with the meter reading processes.

GHD stated that assessment of the distribution of preventive to corrective maintenance is problematic and would usually be conducted against system losses, unaccounted for water and non-revenue water evaluating reductions in these loses against the maintenance expenditure. GHD stated that a range of issues, such as the complication of natural watercourses used as the

transport mechanism and actions by other irrigators, make it extremely difficult to make this assessment.

GHD considered that contractor costs are also reflective of a higher corrective maintenance regime. In applying engineering and operational management judgement, GHD determined this ratio to be reasonable.

Dams and weirs are generally long-lived assets that combined with appropriate periodic maintenance programs can be retained in service indefinitely. The maintenance and inspection program is relatively static from year to year. GHD considered the forecast provided by SunWater reflects a static program of work to maintain the assets in this scheme.

GHD made no recommendations for adjustment to SunWater's proposed preventive and corrective maintenance costs for this scheme.

Conclusion

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

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

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

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

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

The Authority notes that GHD did not recommend any specific adjustment to costs.

Item 3: Electricity

Stakeholder Submissions

SunWater

SunWater advised that there are no electricity costs for this scheme.

Other Stakeholders

No other stakeholders have commented on these items.

Authority Analysis

The Authority notes that there are no electricity costs for this scheme.

Item 4: Other – Materials and Contractors

Stakeholder Submissions

SunWater

Materials and contractor costs are based on the quantities required in the work instructions for the scheme. SunWater advised that the unit cost of materials and contractors are based on current unit costs, with adjustments made where those costs are expected to change in real terms. Materials and contractors costs are direct costs associated with operations, corrective and preventive maintenance activities.

Other Stakeholders

No other stakeholders have commented on these items.

Authority's Analysis

GHD's Review

GHD considered the contactor and materials costs to be appropriate. This consideration is made understanding that SunWater no longer maintains machinery such as backhoes in the region and relies on contractors. This decision was made on the basis that the utilisation of the equipment did not justify the retention of the equipment. GHD also considered materials to be appropriate. SunWater have advised the main expense in this cost line is for poisons for weed management.

GHD made no recommendations for adjustment to SunWater's proposed materials and contractors costs for this scheme.

Conclusion

The Authority notes that GHD did not recommend any adjustment to costs.

Item 5: Cost Escalation

As noted in Volume 1, the Authority's consultants were required to examine the appropriateness of SunWater's proposed cost escalation methods.

Direct Labour

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

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

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

Direct Materials and Contractors

Most consultants agreed that SunWater's proposed escalation factor of 4% per annum for this component of cost was appropriate. Evidence in support included the historical analysis of Australian Bureau of Statistics (ABS) construction cost data and forecasts of industry trends. However, both Halcrow and GHD considered that SunWater had not provided sufficient

rationale for its proposed escalation factor of 4% per annum for direct materials and contractor services, and that these costs should be escalated at the general rate of inflation.

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

Other Direct 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.

Non-direct costs

The Authority accepts SunWater's proposal to escalate all non-direct costs by 2.5% per annum for the 2012-17 regulatory period, and for the interim year 2011-12.

Conclusion

A comparison of SunWater's and the Authority's direct operating costs for the Cunnamulla WSS is set out in Table 5.8.

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 5.8: 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	20	20	20	21	21	19	19	20	20	20
Electricity	0	0	0	0	0	0	0	0	0	0
Preventive maintenance	2	2	2	2	2	2	2	2	2	2
Corrective maintenance	4	4	4	4	4	3	3	3	3	3
Total	**25**	**25**	**26**	**26**	**26**	**25**	**25**	**25**	**25**	**25**

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

5.5 Cost Allocation According to WAE Priority

It is necessary 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

Participants at the Round 1 consultation identified that other entitlement holders include the local government authority (Paroo Shire Council) and the golf course.

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 Cunnamulla 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 5.9. The Authority's recommended operating costs are set out in Table 5.10. These tables do not include the non-direct costs allocated to renewals.

Table 5.9: SunWater's Proposed Operating Costs (Real $'000)

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations					
Labour	10	10	10	10	10
Materials	3	3	3	3	3
Contractors	5	5	5	5	5
Other	3	3	3	4	3
Non-direct	19	20	20	19	18
Preventive Maintenance					
Labour	2	2	2	2	2
Materials	0	0	0	0	0
Contractors	0	0	0	0	0
Other	0	0	0	0	0
Non-direct	4	4	4	4	4
Corrective Maintenance					
Labour	2	2	2	2	2
Materials	1	1	1	1	1
Contractors	0	0	0	0	0
Other	0	0	0	0	0
Non-direct	5	5	5	5	5
Electricity	0	0	0	0	0
Total	**54**	**55**	**54**	**54**	**53**

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

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations					
Labour	9	9	9	10	10
Materials	2	3	3	3	3
Contractors	4	5	5	5	5
Other	3	3	3	3	3
Non-direct	19	19	19	18	17
Preventive Maintenance					
Labour	2	2	2	2	2
Materials	0	0	0	0	0
Contractors	0	0	0	0	0
Other	0	0	0	0	0
Non-direct	4	4	4	4	3
Corrective Maintenance					
Labour	2	2	2	2	2
Materials	1	1	1	1	1
Contractors	0	0	0	0	0
Other	0	0	0	0	0
Non-direct	5	5	5	4	4
Electricity	0	0	0	0	0
Total	**52**	**53**	**52**	**51**	**50**

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 twenty-two SunWater bulk water schemes and eight distribution systems and, for relevant schemes, prices 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 (including the Cunnamulla WSS). 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 towards achieving lower bound costs. However, this scheme did not achieve lower bound costs by the conclusion of the 2006-11 price path.

In 2011-12 prices in this scheme were also 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 recommending irrigation prices.

6.3 Total Costs

The Authority's estimate of prudent and efficient total costs for the Cunnamulla 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 Cunnamulla WSS (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	95	51	80	60	62	60	61	63	62	61	60
Renewals Annuity	17	16	15	14	14	9	9	10	10	9	9
Operating Costs	78	34	64	46	48	51	54	55	54	54	53
Revenue offsets	0	-3	0	-1	-1	-2	-2	-2	-2	-2	-2
Authority's Total Costs	-	-	-	-	-	-	56	57	56	55	54
Renewals Annuity	-	-	-	-	-	-	5	6	6	6	6
Operating Costs	-	-	-	-	-	-	52	53	52	51	50
Revenue offsets	-	-	-	-	-	-	-2	-2	-2	-2	-2

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 Cunnamulla WSS.

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; and

(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 Cunnamulla 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 70% of costs in the fixed charge and 30% of costs in the volumetric charge.

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

6.5 Allocation of Costs According to WAE Priority

Fixed Costs

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

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

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Net Fixed Costs	51	52	51	50	49
High Priority	0	0	0	0	0
Medium Priority	51	52	51	50	49

Note: Net fixed costs is 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 73.7% 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. As the Cunnamulla WSS was a revenue cap scheme, the cost-reflective Part A charge incorporates the carryover adjustment required under the previous revenue cap arrangements (as noted in Chapter 2 – Regulatory Framework). 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 Cunnamulla 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*
Fixed (Part A)	10.56	12.36	14.52	16.56	18.56	19.24	18.64	19.10	19.58	20.07	20.57
Volumetric (Part B)	8.23	9.63	11.31	12.91	14.47	14.99	2.75	2.82	2.89	2 97	3.04

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

6.7 Queensland Government Pricing Policies

As noted above, the Queensland Government has directed that:

(a) where current prices are above the level required to recover prudent and efficient costs, current prices are to be maintained in real terms;

(b) where cost-reflective prices are above current prices, the Authority must consider recommending price paths to moderate price impacts on irrigators, whilst having regard to SunWater's commercial interests; and

(c) for certain schemes or segments of schemes [hardship schemes], prices should increase in real terms at a pace consistent with 2006-11 price paths, until such time as the scheme reaches the level required to recover prudent and efficient costs.

Price paths may extend beyond 2012-17, provided the Authority gives its reasons. The Authority must also give its reasons if it does not recommend a price path, where real price increases are recommended by the Authority.

Authority's Analysis

To identify the relevant price path (if any), the Authority must first identify whether current prices recover prudent and efficient costs. To do so, given changes to tariff structure, the Authority has compared current revenues with revenues 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 are above the level required to recover prudent and efficient costs (Table 6.4). Thus, although the Cunnamulla WSS is a hardship scheme, there is no need to increase revenues. The Authority is required to recommended prices that maintain revenues in real terms for the 2012-17 regulatory period.

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

Tariff and Priority Group	*2010-11 Prices (indexed to 2012-13)*		*Irrigation WAE (ML)*	*Water Use (ML)*	*Current Revenue*	*Revenue from Cost-Reflective Tariffs*	*Difference*
	Fixed	*Variable*					
River	$19.50	$15.20	2,492	1,486	$71,181	$50,530	$20,650

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

6.8 The Authority's Recommended Prices

The Authority's recommended prices to apply to the Cunnamulla 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 6.5: Draft Medium Priority Prices for the Cunnamulla 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*
Fixed (Part A)	10.56	12.36	14.52	16.56	18.56	19.24	26.85	27.52	28.21	28.91	29.64
Volumetric (Part B)	8.23	9.63	11.31	12.91	14.47	14.99	2.75	2.82	2.89	2.97	3.04

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

6.9 Impact of Recommended Prices

The impact of any change in prices on the total cost of water to a particular irrigator, can only be accurately assessed by taking into account the individual irrigator's water usage and nominal WAE (see Volume 1).

REFERENCES

Anderson, B. (2010). Submission re: Irrigation Prices for SunWater Schemes: 2011-16, September.

Australian Competition and Consumer Commission (ACCC). (2008a). W*ater Charge (Termination Fees) Rules Final Advice*. Canberra: Commonweath of Australia.

Australian Competition and Consumers Commission (ACCC). (2008b). *Water Market Rules.* Canberra: Commonwealth of Australia.

Australian Competition and Consumers Commission (ACCC). (2010). *Water Charge (Infrastructure) Rules (WCIR).* Canberra: Commonwealth of Australia.

Australian Sugar Milling Council (ASMC). (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Avondale Water Board (AWB). (2010). Submission re: Irrigation Prices for SunWater Schemes: 2011-16, April.

Baldwin, N. S. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, May.

Biggs, J. (2011). Submission re: Irrigation Prices for SunWater Cunnumulla Weir Scheme, April.

Bowen Broken Water Supply Scheme Irrigators. (2011). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Boyne River Irrigator Advisory Committee. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, August.

Boyne River Irrigator Advisory Committee. (2011). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Bundaberg Fruit and Vegetable Growers Cooperative Ltd. (BFVG). (2010a). Submission re: Irrigation Prices for SunWater Schemes 2011-16, August.

Bundaberg Fruit and Vegetable Growers Cooperative Limited (BFVG). (2010b). Submission re: Irrigation Prices for SunWater Schemes 2011-16, November.

Bundaberg Regional Irrigators Group (BRIG). (2010a). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Bundaberg Regional Irrigators Group (BRIG). (2010b). Submission re: Irrigation Prices for SunWater Schemes 2011-16, September.

Bundaberg Regional Irrigators Group (BRIG). (2010c). Submission re: Nodal Pricing, September.

Bundaberg Regional Irrigators Group (BRIG). (2010d). Submission re: Extended Water Pricing Consultation Period, November.

Bundaberg Regional Irrigators Group (BRIG). (2010e). Submission re: Irrigation Prices for Bundaberg Schemes 2011 to June 2016 on Issues Papers Released as at November 2010, November.

Bundaberg Regional Irrigators Group (BRIG). (2011a). Submission re: Irrigation Prices for SunWater Schemes 2011-16, February.

Bundaberg Regional Irrigators Group (BRIG). (2011b). Submission re: Irrigation Prices for SunWater Schemes 2011-16, March.

Bundaberg Regional Irrigators Group (BRIG). (2011c). Submission re: Irrigation Prices for the Bundaberg Scheme 2011 to June 2016 Following the Bundaberg Visit by Aurecon Representatives March 2011, March.

Bundaberg Regional Irrigators Group (BRIG). (2011d). Submission re: Irrigation Prices for SunWater Schemes 2011-16 Bundaberg Scheme, April.

Bundaberg Sugar. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, August.

Burdekin River Irrigation Area Committee. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, November.

Burdekin River Irrigation Area Committee. (2011a). Submission re: Irrigation Prices for SunWater Schemes 2011-16, March.

Burdekin River Irrigation Area Committee. (2011b). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Canegrowers Isis Limited. (2010a). Submission re: Bundaberg Isis Irrigation Scheme, August.

Canegrowers Isis Limited. (2010b). Submission re: The Progress of the Bundaberg - Isis Irrigation Scheme, August.

Canegrowers Isis Limited. (2010c). Submission re: Water Pricing Options for the Bundaberg WSS, August.

Canegrowers Isis Limited. (2011). Submission re: Bundaberg Water Supply Scheme and Distribution System Network Service Plans, April.

Canegrowers Proserpine Limited. (2011). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

CANEGROWERS. (2011a). Submission re: Irrigation Prices for SunWater Schemes 2011-16, February.

CANEGROWERS. (2011b). Submission re: Irrigation Prices for SunWater Schemes 2011-16, March.

CANEGROWERS. (2011c). Submission re: Irrigation Prices for Sunwater Schemes 2011-16, April.

Central Downs Irrigators Ltd. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, August.

Central Highlands Cotton Growers and Irrigators Association (CHCGIA). (2010a). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Central Highlands Cotton Growers and Irrigators Association (CHCGIA). (2010b). Submission re: Issues Paper, August.

Childers and District Fruit and Vegetables Growers Association. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, August.

Commonwealth of Australia 2011, *Of drought and flooding rains - Inquiry into the impact of the Guide to the Murray-Darling Basin Plan*, House of Represenatives Standing Committee on Regional Australia, Canberra, May

Cooinda Cotton Co. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, July.

Cooinda Cotton Co. (2011). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Cotton Australia. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, November.

Cotton Australia/QFF. (2011a). Submission re: Irrigation Prices for SunWater Schemes 2011-16, February.

Cotton Australia/QFF. (2011b). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Council of Australian Governments (COAG). (1994). *Report of the Working Group on Water Resource Policy: Communique.* Canberra: Council of Australian Governments.

Council of Australian Governments (COAG). (2004). *Intergovernmental Agreement on a National Water Initiative.* Canberra: Council of Australian Governments.

Council of Australian Governments (COAG). (2010). *National Water Initiative Principles.* Canberra: Council of Australian Governments.

Cronin, S. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Dawson Valley Irrigators Group. (2010). Submission re: Irrigation Prices for SunWater Scheme 2011-16, July.

Department of Natural Resources and Water (DNRW). (2008). *Submission to Water Charge Rules Issues Paper for Charges Payable to Irrigation Infrastructure Operators*. Brisbane: Department of Natural Resources and Water.

Deloitte. (2011). SunWater Administration Cost Review Phase 2. A Consultancy Report Prepared for the Queensland Competition Authority, March.

Dunsdon, G. (2011). Submission re: Irrigation Prices for SunWater Schemes 2011-16 for the Cunnamulla Weir Scheme, May.

Economic Regulation Authority (ERA). (2007). Inquiry on Harvey Water Bulk Water Pricing, April.

Economic Regulation Authority (ERA). (2009). Inquiry into Tariffs of the Water Corporation, Aqwest and Busselton Water, August.

Enkelmann, P. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Enkelmann, P. (2011a). Submission from the Murgon Meeting of the 14 April 2011, April.

Enkelmann, P. (2011b). Submission re: Irrigation Water Prices 2011-16, April.

Enkelmann, P. (2011c). Submission re: Water Pricing for Barker Barambah Water Supply Scheme, April.

Essential Services Commission (ESC). (2008). 2008 Water Price Review: Regional and Rural Businesses' Water Plans 2008-13 and Melbourne Water's Drainage and Waterways Water Plan 2008-13, June.

Essential Services Commission of South Australia (ESCOSA). (2010). Inquiry into the 2010-11 Metropolitan and Regional Potable Water and Sewerage Pricing Process: Final Report, October.

Eton Irrigators Advisory Committee. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Eton Irrigators Advisory Committee. (2011a). Submission re: Irrigation Prices for SunWater Schemes 2011-16, March.

Eton Irrigators Advisory Committee. (2011b). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Francis, P., & Francis, M. (2011). Submission re: Irrigation Prices for SunWater Schemes 2011-16 - Three Moon Creek Water Supply Scheme, April.

Frontier Economics. (2008). Termination Fees and Landholder Considerations. A Consultancy Report Prepared for the Australian Competition and Consumers Association, October.

Gilbert and Sutherland. (2011). Quality Assurance Assessment of a Review of SunWater's Headworks Utilisation Factors Methodology. A Consultancy Report Prepared for the Queensland Competition Authority, March.

Growcom. (2010). Submission re: Segmented Water Pricing in Bundaberg, September.

Hetherington, M. and Hetherington, K. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Hinchliffe, G., Hinchliffe, P., & Farmer, G. (2011). Submission re: Network Service Plan - Lower Fitzroy Water Supply Scheme, April.

Hubert, J. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Independent Competition and Regulatory Commission (ICRC). (2008). Water and Wastewater Price Review: Final Report and Price Determination, April.

INDEC. (2011a). SunWater Water Supply Schemes 2011-16 Price Paths: Audit and Review of SunWater's Business Operating Model (BOM). A Consultancy Report Prepared for the Queensland Competition Authority, March.

INDEC. (2011b). SunWater Water Supply Schemes 2011-16 Price Paths: Review of SunWater Pricing Model - Step 1. A Consultancy Report Prepared for the Queensland Competition Authority, March.

Independent Pricing and Regulatory Tribunal (IPART). (2010a). Review of Bulk Water Charges for State Water Corporation: Water-Final, June.

Independent Pricing and Regulatory Tribunal (IPART). (2010b). Review of Prices for the Water Administration Ministerial Corporation, July.

Independent Pricing and Regulatory Tribunal (IPART). (2011). Review of Prices for the Water Administration Ministerial Corporation, February.

Isis Central Sugar Mill. (2010a). Submission re: Irrigation Prices for SunWater Schemes 2011-16, August.

Isis Central Sugar Mill. (2010b). Submission re: Water Pricing Options, September.

Isis Sugar Partnership. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, November.

Kelsey Creek Water Board. (2011). Submission re: Irrigation Prices for SunWater Schemes, April.

Lower Boyne River Irrigators. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, August.

Lower Burdekin Water. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Lower Burdekin Water. (2011). Submission re: Irrigation Prices for SunWater Schemes 2011-16, May.

MacDonald, K. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Macintyre Brook Irrigators Association. (2011). Submission re: SunWater Price Path Issues Regarding the Macintyre Brook Scheme, April.

Mackay Canegrowers Limited and Mackay Sugar Limited. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Mackay Irrigation Stakeholders. (2010). Submission re: Irrigations Prices for SunWater Schemes 2011-16, November.

Mackenzie, R. A. (2010a). Submission re: Rate of Return, June.

Mackenzie, R. A. (2010b). Submission re: Postage Stamp Prices, June.

Mackenzie, R. A. (2010c). Submission re: Standard Supply Contracts, September.

Mareeba Dimbulah Irrigation Area Council (MDIAC). (2010). Submission re: Irrigation Prices for SunWater Schemes, November.

Mareeba Dimbulah Irrigation Area Council (MDIAC). (2011). Submission re: Irrigation Prices for SunWater Schemes, April.

Maryborough Sugar Factory (MSF). (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, November.

Maryborough Sugar Factory (MSF). (2011). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

McColl, D. (2010a). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

McColl, D. (2010b). Submission re: Irrigation Prices for SunWater Schemes 2011-16, November.

McGuigan, B. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

McLellan, P., & McLellan, B. (2011). Submission re: Irrigation Prices for SunWater Scheme 2011-2016, April.

Millar, C. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, May.

National Water Commission. (2008). N*ational Performance Report 2006-07: Rural Water Service Providers.* Canberra: Australian Government.

NERA Economic Consulting. (2010a). Form of Price Control: SunWater Water Supply Schemes. Issues Paper Prepared for the Queensland Competition Authority, August.

NERA Economic Consulting. (2010b). Single or Multiple Rate of Return: SunWater. A Consultancy Report Prepared for the Queensland Competition Authority, August.

NERA Economic Consulting. (2011). Cost of Capital for Water Infrastructure Company. A Consultancy Report Prepared for the Queensland Competition Authority, March.

O'Brien MP, J. (2010). Submission re: Irrigation Prices fo SunWater Schemes 2011-16, June.

Office for Water Security. (2010). *Water for Good.* Adelaide: Government of South Australia.

Otto, N., & Otto, M. (2011). Submission re: Irrigation Prices for SunWater Schemes, April.

Parsons Brinckerhoff (2010), Provisions of Services for Costing SunWater's Work Instructions. A Consultancy Report Preparef for SunWater, October.

Pioneer Valley Water Co-operative Limited. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Pioneer Valley Water Co-operative Limited. (2011a). Submission re: SunWater Network Service Plan - Pioneer River Water Supply Schemes, February.

Pioneer Valley Water Co-operative Limited. (2011b). Submission on Consultants Draft Report on Pioneer WSS Network Service Plan, April.

Pioneer Valley Water Co-Operative Limited. (2011c). Submission on Consultants Draft Report on SunWater Administration Cost Review, April.

PriceWaterHouseCoopers (PwC). (2010a). Pricing Principles and Tariff Sructures for SunWater's Water Supply Schemes. Issues Paper Prepared for the Queensland Competition Authority, September.

PriceWaterHouseCoopers (PwC). (2010b). Allocating Capital Costs of Bulk Water Supply Assets. Issues Paper Prepared for the Queensland Competition Authority, September.

Productivity Commission. (2011). *Australia's Urban Water Sector (Draft Report)*. Canberra: Commonwealth of Australia.

Proserpine District Canegrowers Cooperative Limited and Proserpine Co-operative Sugar Milling Association Limited. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, November.

Queensland Competition Authority (QCA). (2000). Statement of Regulatory Pricing Principles for the Water Sector, December.

Queensland Competition Authority (QCA). (2002). Gladstone Area Water Board: Investigation of Pricing Practices, September.

Queensland Competition Authority (QCA). (2005). Gladstone Area Water Board: Investigation of Pricing Practices - Final Report, March.

Queensland Competition Authority (QCA). (2010). Gladstone Area Water Board: Investigation of Pricing Practices, July.

Queensland Farmers' Federation (QFF). (2010a). Submission re: Irrigation Prices for SunWater Schemes 2011-16, July.

Queensland Farmers' Federation (QFF). (2010b). Submission re: Irrigation Prices for SunWater Schemes 2011-16, November.

Queensland Valuation Services (QVAS). (2010). Permanent Water Trade.

Robertson MP, Hon Stephen. (2010a). Submission re: Nodal Pricing Arrangements, September.

Robertson MP, Hon Stephen. (2010b). Submission re: Assets Associated with Bulk Water Supply Service, September.

Roth, R. (2011). Submission re: Irrigation Prices for Sunwater Schemes 2011-16 - Three Moon Creek, March.

SAHA. (2010). Renewals Annuity or a Regulatory Depreciation Allowance: SunWater's Water Supply Schemes 2011-16 Price Paths. Issues Paper Prepared for the Queensland Competition Authority, September.

SAHA. (2011). Assessment of SunWater's Administration Costs. A Consultancy Report Prepared for the Queensland Competition Authority, January.

Simpson Farms. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, August.

SP Exports. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, August.

St George Irrigators. (2010). Perspectives on Pricing of Irrigation Water in Queensland 2011-2016, July.

St George Irrigators. (2011). St George Water Supply Scheme, Network Service Plan, 2012-2016, April.

Stewart, D. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, May.

Strathdee, B. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, May.

SunWater. (2003). *SunWater Annual Report 2002-03.* Brisbane: SunWater Limited.

SunWater. (2004). *SunWaterAnnual Report 2003-04.* Brisbane: SunWater Limited.

SunWater. (2005). *SunWater Annual Report 2004-05.* Brisbane: SunWater Limited.

SunWater. (2006a). Statewide Irrigation Pricing Working Group: Tier 1 Report. Brisbane, April: SuinWater Limited.

SunWater. (2006b). *SunWater Irrigation Price Paths 2006-07 to 2010-11: Final Report.* Brisbane: SunWater Limited, September.

SunWater. (2006c). *SunWater Annual Report 2005-06.* Brisbane: SunWater Limited.

SunWater. (2007). *SunWaterAnnual Report 2006-07.* Brisbane: SunWater Limited.

SunWater. (2008). *SunWater Annual Report 2007-08.* Brisbane: SunWater Limited.

SunWater. (2009). SunWater Annual Report 2008-09. Brisbane: SunWater Limited

SunWater. (2010a). QCA Review of Irrigation Prices: Public Submission Letter, May.

SunWater. (2010b). QCA Review of Irrigation Prices: Service Framework Background Paper. Brisbane, May.

SunWater. (2010c). QCA Review of Irrigation Prices: Contributed Assets Background Paper, May.

SunWater. (2010d). QCA Review of Irriagtion Prices: Headworks Utilisation Factors Technical Report, September.

SunWater. (2010e). QCA Review of Irrigation Prices: Bulk Water Asset Valuation, October.

SunWater. (2010f). QCA Review of Irrigation Prices: Asset Management Planning Methodology Paper, October.

SunWater. (2010g). *SunWater Annual Report 2009-10.* Brisbane: SunWater Limited.

SunWater. (2011). Cunnamulla Water Supply Scheme Network Service Plan, January.

SunWater. (2011a). QCA Review of Irrigation Prices: Centralised Costs Background Paper, January.

SunWater. (2011b). QCA Review of Irrigation Prices: Cost Forecasting Assumptions Background Paper, January.

SunWater. (2011c). QCA Review of Irrigation Prices: Renewals Annuity Background Paper, January.

SunWater. (2011d). QCA Review of Irrigation Prices: Pricing Principles and Tariff Structures January.

SunWater. (2011e). QCA Review of Irrigation Prices: Form of Regulation, January.

SunWater. (2011f). QCA Review of Irrigation Prices: Review and Adjustment Triggers Supplementary Information, February.

SunWater. (2011g). QCA Review of Irrigation Prices: Allocation of Centralised Costs Supplementary Information, February.

SunWater. (2011h). QCA Review of Irrigation Prices: Electricity Costs Background Paper, February.

SunWater. (2011i). QCA Review of Irrigation Prices: Water Distribution Entitlements Supplementary Information, February.

SunWater. (2011j). QCA Review of Irrigation Prices: Bulk Water Price Differentiation Supplementary Submission, February.

SunWater. (2011k). QCA Review of Irrigation Prices: Customer Involvement in Renewals Expenditure Supplementary Background Paper, February.

SunWater. (2011l). QCA Review of Irrigation Prices: Weighted Average Cost of Capital - Renewals Annuity Background Paper, February.

SunWater. (2011m). QCA Review of Irrigation Prices: Pumping Cost Reconciliation, February.

SunWater. (2011n). QCA Review of Irrigation Prices: WAE Reconciliation, February.

SunWater. (2011o). QCA Review of Irrigation Prices: Storage Rental Fees, March.

SunWater. (2011p). QCA Review of Irrigation Prices: Pricing of Distribution Losses, March.

SunWater. (2011q). QCA Review of Irrigation Prices: Estimated Flood Damage Letter, March.

SunWater. (2011r). QCA Review of Irrigation Prices: Metering and Price Model Letter, March.

SunWater. (2011s). QCA Review of Irrigation Prices: Tariff Groupings, March.

SunWater. (2011t). QCA Review of Irrigation Prices: Revenue Analysis, March.

SunWater. (2011u). QCA Review of Irrigation Prices: Electricity - Actual vs 2006 IPR Forecast, March.

SunWater. (2011v). QCA Review of Irrigation Prices: Water Harvesting Usage Summary, April.

SunWater. (2011w). QCA Review of Irrigation Prices: Headworks Utilisation Factors, Critical Periods and Bulk Water Supply Capital Cost Allocatoon, April.

SunWater. (2011x). QCA Review of Irrigation Prices: Headworks Utilisation Factors Addendum, May.

SunWater. (2011y). QCA Review of Irrigation Prices: Service Delivery Strategies, May.

SunWater. (2011z). QCA Review of Irrigation Prices: Service Delivery Paper, May.

SunWater. (2011aa). QCA Review of Irrigation Prices: Drainage Data, April.

SunWater. (2011ab). QCA Review of Irrigation Prices: Response to Pioneer Valley Water Board Submission on the Pioneer River Water Supply Scheme - Network Services Plan, May.

SunWater (2011ac). QCA Review of Irrigation Prices: Administration Costs for Bundaberg Groundwater, June.

SunWater. (2011ad). Submission: Cunnamulla, August

Synergies Economic Consulting. (2010). Rural Water Pricing Business and Scheme Overview. A Consultancy Report to the Queensland Competition Authority, January.

Tableland Canegrowers Ltd and Mareeba District Fruit and Vegetable Growers Association Inc. (2010a). Submission re: Key Issues on Irrigation Prices for Mareeba-Dimbulah Water Supply Scheme, July.

Tableland Canegrowers Ltd and Mareeba District Fruit and Vegetable Growers Association Inc. (2010b). Submission re: Tiered Pricing, August.

Tanner, J., & Tanner, S. (2011). Submission re: Irrigation Prices fro SunWater Schemes 2011-16, May.

Thomas, W. A. (2011). Submission re: Principles Relevant to Recovering Long-Run Average Costs of SunWater Schemes, April.

Voss, A. (2011). Submission re: Irrigation Prices for SunWater Schemes 2011-16, April.

Water Act 2000 (Qld).

Water Act 2007, No. 137 (Cwlth).

Water Regulation 2002 (Qld).

Water Supply (Safety and Reliability) Act 2008 (Qld).

Weir, T. (2010). Submission re: Irrigation Prices for SunWater Schemes 2011-16, July.

World Wildlife Fund (WWF). (2010). Submission re: Irrigatiion Prices for SunWater Schemes 2011-16, May.

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)*
Allan Tannock Weir	2013-14	10CUWXX REPAIR EROSION AT WALL	19
	2015-16	Refurbish: Repair or Replace Aluminium Rack	12
		Refurbish: Sluice Gate Moved out from 04 by Raj Nov 03-	12
	2025-26	Refurbish: Sluice Gate Moved out from 04 by Raj Nov 03-	12
	2027-28	Refurbish: Repair or Replace Aluminium Rack	12
	2031-32	Replace 1050 Sluice Gate	13
	2032-33	09CUW-REFURBISH: Protection works	36
	2035-36	Refurbish: Sluice Gate Moved out from 04 by Raj Nov 03-	12