QUEENSLAND COMPETITION AUTHORITY

Draft Report

SunWater
Irrigation Price Review: 2012-17

Volume 2

Proserpine River
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 deletions.

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 (WSSs) 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 Proserpine River bulk WSS for the 2012-17 regulatory period are outlined in Table 1 together with actual prices since 1 July 2006.

Table 1: Recommended Medium Priority Prices for the Proserpine River WSS ($/ML)

	Actual Prices						*Recommended Prices*				
	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
River – Medium Priority											
Fixed (Part A)	7.52	7.76	8.12	8.36	8.64	8.92	10.51	10.77	11.04	11.32	11.60
Volumetric (Part B)	7.48	7.70	8.07	8.32	8.58	8.88	3.00	3.08	3.16	3.23	3.32
River (Kelsey Creek Water Board) – Medium Priority											
Fixed (Part A)	7.52	7.76	8.12	8.36	8.64	8.92	9.67	9.91	10.16	10.41	10.67
Volumetric (Part B)	5.55	5.71	5.98	6.17	6.36	6.59	3.00	3.08	3.16	3.23	3.32

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. PROSERPINE RIVER WATER SUPPLY SCHEME

1.1 Scheme Description

The Proserpine River WSS has 92 customers, including the Kelsey Creek Water Board (KCWB), the Six Mile Creek Water Board and various townships. An overview of the key characteristics of the scheme is provided in Table 1.1. Details of water access entitlements (WAE) are provided in Table 1.2.

Table 1.1: Key Scheme Information for the Proserpine River WSS

	Proserpine River WSS
Business Centre	Ayr
Irrigation Uses of Water	Sugar
Urban water supplies	Townships of Bowen, Proserpine, Airlie Beach and Midge Point
Industrial Water Supplies	Sugar milling

Source: Synergies Economic Consulting (2010).

Table 1.2: Water Access Entitlements

Customer Group	***Irrigation WAE (ML)***	***Total WAE (ML)***
Medium Priority	38,075	38,075
High Priority	-	22,000
Total	38,075	60,075

Source: SunWater (2011am).

The KCWB holds 10,000 ML and the Six Mile Creek Water Board holds 3,000 ML of medium priority WAE for redistribution to their respective customers. SunWater holds 10,512 ML of high priority WAE.

1.2 Bulk Water Infrastructure

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

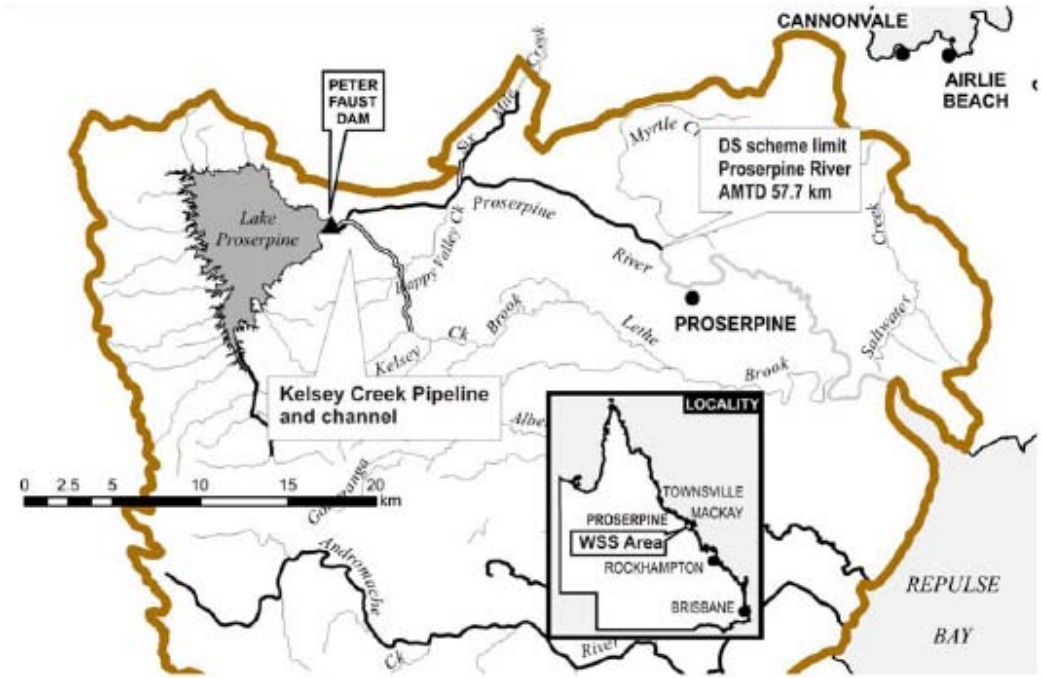
Stakeholder Submissions

SunWater

The only bulk water infrastructure in the scheme is the Peter Faust Dam, which was completed in 1990 and has a capacity of 491,000 ML. Distribution infrastructure, such as the Kelsey Creek Pipeline and Channel, is owned by the water boards.

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

Figure 1.1: Proserpine River WSS Locality Map



Source: SunWater (2011).

Other Stakeholders

Proserpine District Canegrowers Cooperative Limited and Proserpine Co-Operative Sugar Milling Association Limited (2010) advised that the Water Resources Commission constructed the Peter Faust Dam in the 1980s to provide for urban, industrial and agricultural expansion in addition to providing protection to the community from frequent flooding. The history of the dam was also noted by irrigators at the first round of consultation (May 2010).

1.3 Network Service Plan

The Proserpine River WSS network service plan (NSP) presents SunWater's:

(a) existing service standards;

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

(c) identified risks 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 paths, the Proserpine River Tier 2 group indicated that they were in favour of retaining the existing price cap regulatory arrangement. In the 2011-12 interim price period, the price cap arrangement was continued.

2.2 Stakeholder Submissions

SunWater

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

(a) the introduction of schemes relating to the reduction of greenhouse gases that may have implications for electricity prices;

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

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

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

(e) outbreak of noxious weeds.

Other Stakeholders

Proserpine District Canegrowers and Proserpine Co-operative Sugar Milling Association Limited (2010) submitted that the form of price control should encourage SunWater to better manage for the impact of demand variability on revenue. Further, given the variability of supply in the area, there should be explicit consideration of the trade-off between risk to customers and risk to SunWater.

2.3 Authority's Analysis

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

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

Risk	*Nature of the Risk*	*Allocation of Risk*	*Authority's Recommended Response*
Short Term Volume Risk	Risk of uncertain usage resulting from fluctuating customer demand and/or water supply.	SunWater does not have the ability to manage these risks and, under current legislative arrangements, these are 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 it 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. It should be noted that anticipated prudent and efficient electricity costs are reviewed as part of the Authority's analysis of efficient operating costs, and it is only if they are materially different to those forecast would there be a case to consider price triggers or cost pass throughs.

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

The Authority notes the comment from Proserpine District Canegrowers and Proserpine Co-operative Sugar Milling Association Limited that the form of price control should encourage SunWater to better manage short run volume risks. While the Authority recognises that the impact on customers must be taken into account, as the major financial beneficiaries of the scheme, short term volume risks should be assigned to customers as they are better placed to manage these risks by sourcing additional WAEs. Short term demand risks will therefore need to be managed, and their cost borne, by customers.

Further, 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).

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 to variable costs. However, due to the prevailing Government policy that there should be no real price decreases, the final tariffs for Proserpine River customers were based on a Part A charge to recover 59% of revenue and a Part B charge to recover 41% of revenue. The tariffs for the KCWB were based on revenue recovery of 66% for the Part A charge and 34% for the Part B charge.

Stakeholder Submissions

SunWater

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

Other Stakeholders

KCWB (2011) and CANEGROWERS Proserpine (2011) expressed strong support for the continuation of the existing two-part tariff structure in which fixed and variable costs are recovered proportionately. They noted that if delivery charges were set to reflect the underlying cost of providing the service, and all costs except electricity were deemed to be fixed, the tariff structure for the scheme would be 93% fixed and 7% variable.

Such a ratio would dramatically reduce the efficiency of the scheme and encourage over-utilisation of the resource which contravenes the principles of the Government's Rural Water Use Efficiency program.

KCWB (2011) and CANEGROWERS Proserpine (2011) also noted that a volumetric charge which exceeds the variable cost of supply will generally result in underutilisation of the service and, consequently, a reduction in revenues for SunWater.

Authority's Analysis

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

In response to comments by KCWB and CANEGROWERS, 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 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 Proserpine River WSS are identified in Table 3.1.

Table 3.1: Volume of Permanent and Temporary Water Trades (ML)

	2002-03	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*	*2008-09*	*2009-10*
Permanent	0	0	0	0	0	0	0	0
Temporary	9,331	1,275	4,162	4,960	9,290	700	850	240

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

Annual volumes of trades are material when viewed against the total WAE in the scheme and therefore may also play an ongoing role in the efficient allocation of water for this scheme.

The Authority recognises that a change in tariff structure may impact the value of entitlements, and therefore incentives to trade. This matter is addressed further below. The Authority's analysis of whether service delivery costs are fixed or variable is addressed in a subsequent chapter as is cost allocation.

3.2 Water Use Forecasts

Introduction

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

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

For the Proserpine River WSS, SunWater (2006b) assumed an annual water usage of 70% of WAE in the river system.

Stakeholder Submissions

SunWater

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

SunWater (2011d) 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 having regard to historic averages over an eight-year period and the usage forecast applied for the current price path. SunWater advised that usage of high priority and medium priority irrigation water cannot be separately identified, as holders of high priority WAE also hold medium priority WAE which passes through the same meter.

Figure 3.1 shows the historic usage information for the Proserpine River WSS. The river category includes all irrigation and other usage sourced from the river. SunWater stated that over the past eight years, total water use in the river system has been 52% of current WAE. Irrigation usage has averaged 65%.

Figure 3.1: Water Usage for the Proserpine River 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 as proposed in SunWater's NSP.

In the previous review (SunWater, 2006b) two tariff groups were nominated for the river segment of the Proserpine River WSS. These were River and River: Kelsey Creek Water Board.

For this review, SunWater proposed in its NSP that the current bulk tariff groups continue.

In accordance with the Ministerial Direction, the Authority will retain the existing tariff groups.

3.4 Kelsey Creek Water Board

Currently, the KCWB receives a discount on the Part B volumetric charge. SunWater advised that this was based on a view at the time that the cost of supplying the Board was less than for other customers. For the 2006-11 price path, the price differentials were retained on the basis

that both prices were already above lower bound (and a policy existed that prices would not be reduced).

Submissions

KCWB submitted that it strongly supports the continuation of the current arrangements and tariff groupings for the scheme and was endeavouring to obtain supporting evidence outlining the history of these arrangements.

Authority's Analysis

SunWater has advised that there is no cost differential in supplying the Board as opposed to other customers. However, KCWB's submission suggests that the differential is a result of a historic capital contribution to KCWB in return for which the KCWB irrigators would not be charged sugar mill levies.

The Authority found that, in the 2000 review of SunWater irrigation price paths sugar mill levies that were applied in some schemes including Proserpine WSS, were phased out and the revenue requirement incorporated into water charges. In the Proserpine WSS, the KCWB customers were given a $1.60/ML discount in the Part B variable charge on the basis that the mill made a capital contribution on their behalf. This differential had escalated to $1.88/ML by 2005-06 and $2.22/ML by 2010-11.

The Authority requested, but is yet to receive, supporting evidence from KCWB relating to the mill levy capital contributions. In the absence of such details, Authority proposes to determine volumetric charges on the basis of available information and will calculate a single cost-reflective charge across the scheme (see Chapter 6 – Draft Prices).

3.5 Storage Rental Fees

SunWater did not propose storage rental fees for unused announced allocation in revenue offsets for Proserpine WSS on the assumption that water charges would recover full lower bound costs. That is, there are no existing or proposed storage rental fees for the scheme.

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). Separate ARR balances were not identified for bulk and distribution systems.

Issues

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

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

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

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

  (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 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, those renewals items which represented more than 10% 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 path was based on the opening ARR balance for the scheme at 1 July 2006.

SunWater submitted that the opening balance for the Proserpine River WSS was negative $20,000.

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

Submissions

SunWater

SunWater (2011) submitted actual renewals expenditure for the Proserpine River 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 (approved for the 2005-06 review) for this period.

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

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

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*
Renewals Expenditure	79	87	103	18	63

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

Other Stakeholders

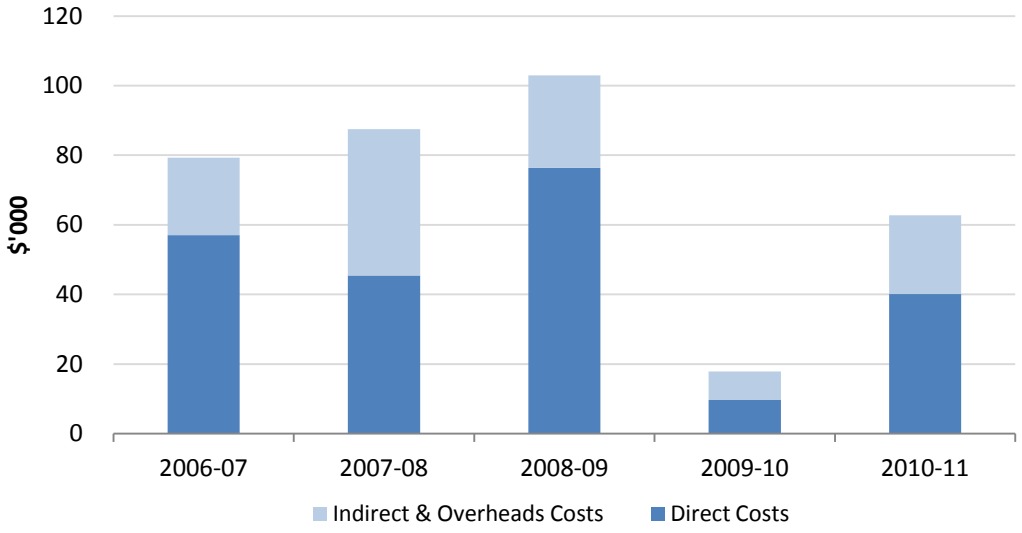
No other stakeholders have commented on this item.

Authority's Analysis

Total Renewals Expenditure

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

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



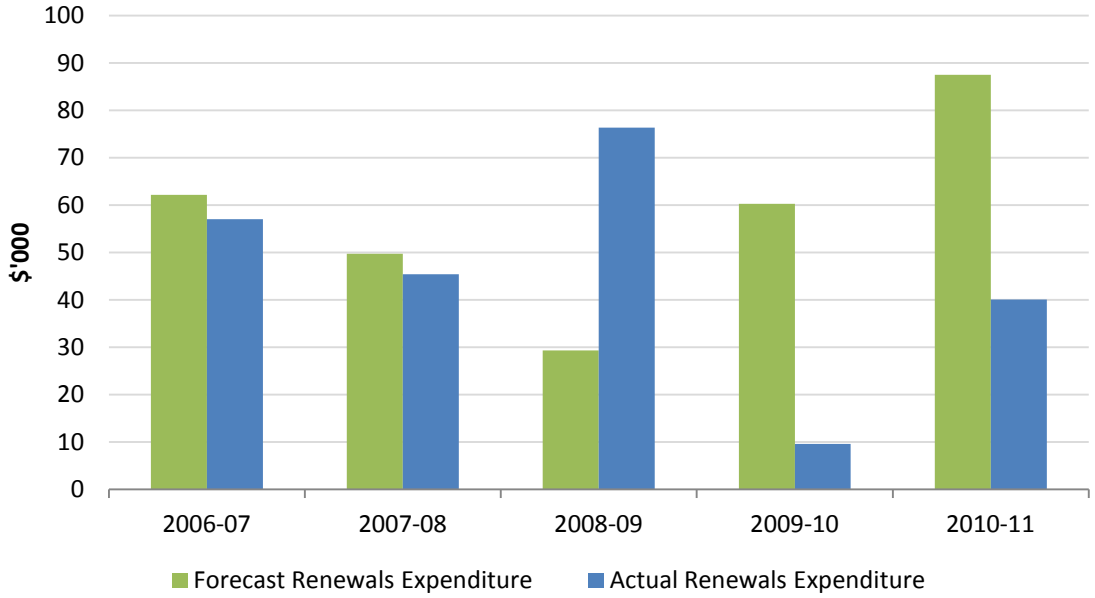
Note: The estimates reflect the most recent information provided by SunWater to the Authority in September 2011.
Source: Indec (2011d).

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 Proserpine River WSS for 2006-11 is shown in Figure 4.2.

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



Note: The estimates reflect the most recent information provided by SunWater to the Authority in September 2011.
Source: Forecast (Indec2011d), Actuals (SunWater, 2011k).

Actual renewals expenditure was $60,462 (direct costs) lower than forecast for the period.

Arup was appointed to review the prudency and efficiency of past renewals expenditure items. In the absence of forecast renewals expenditure for 2006-11 from SunWater (at the time of Arup's review), Arup sought to identify variances between annually budgeted and actual expenditure for certain projects.

Arup (2011) noted that some items of work undertaken were not previously budgeted for, including:

(a) installation of signs at Peter Faust Dam;

(b) replacement of meter for Proserpine Mill;

(c) installation of marker buoys at Peter Faust Dam; and

(d) refurbishment of Shelter Shed, Toilet Block and Site Irrigation Facilities at Peter Faust Dam.

Conclusion

No past expenditure items for the Proserpine River WSS were sampled by consultants (Arup or SKM) for a detailed review. However, the Authority notes that with regard to the unbudgeted works identified by Arup:

(a) installation of signs at Peter Faust Dam – work was undertaken in 2008-09 ($22,041);

(b) replacement of meter for Proserpine Mill – work was undertaken in 2008-09 ($17,949);

(c) installation of marker buoys at Peter Faust Dam – work was undertaken in 2008-09 ($9,916) and 2009-10 ($12,960); and

(d) refurbishment of Shelter Shed, Toilet Block and Site Irrigation Facilities at Peter Faust Dam – work was undertaken in 2008-09 ($6,434) and 2009-10 ($10,507).

As noted in Volume 1, the Authority has recommended that a 10% saving be applied to all non-sampled and sampled items for which there was insufficient information.

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

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

Item	*Date*	*Authority's Findings*	*Recommended*
Non-sampled Items	Various	Insufficient information.	10% saving applied

Source: QCA (2011).

4.4 Opening ARR Balance (at 1 July 2012)

Stakeholder Submissions

SunWater

SunWater indicated that the opening ARR balance for 1 July 2011 was negative $72,000 for the Proserpine River WSS. This estimate reflects the most recent information provided by SunWater to the Authority in September 2011 and may differ from the NSP.

Other Stakeholders

CANEGROWERS (2011a) noted that the opening ARR balance for the Proserpine River WSS was negative $122,000, compared to negative $30,000 at 1 July 2006.

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 Proserpine River WSS is negative $47,000.

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

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

(b) adding 2006-11 renewals annuity revenue;

(c) subtracting 2006-11 renewals expenditure; and

(d) adding 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 $84,000, 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 expenditure being defined as one which accounts for 10% or more in present value terms of total forecast renewals expenditure; and

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

Prudency and Efficiency of Forecast Renewals Expenditure

Submissions

SunWater

SunWater's forecast renewals expenditure for 2011-16 for the Proserpine River WSS, as provided in its NSP, is presented in Table 4.3 (this was submitted prior to the Government's announced interim prices for 2011-12).

Table 4.3: Forecast Renewals Expenditure 2011-16 (Real $'000)

Facility	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*
Kelsey Creek Pipeline	31	4	102	-	-
Peter Faust Dam	26	37	88	44	44
Total	**56**	**40**	**190**	**44**	**44**

Note: Totals may not sum due to rounding. Source: SunWater (2011).

The major items incorporated in the above estimates are:

(a) Kelsey Creek Pipeline - due to its age and unavailability of spares, the control system needs to be replaced at an estimated cost of $102,000 in 2013-14; and

(b) Peter Faust Dam – five-yearly comprehensive inspection (a legal requirement) at an estimated cost of $88,000 in 2013-14.

The major expenditure relates to the replacement of the electrical cables and cableways at the Peter Faust Dam, at an estimated cost of $1.02 million in 2025-26.

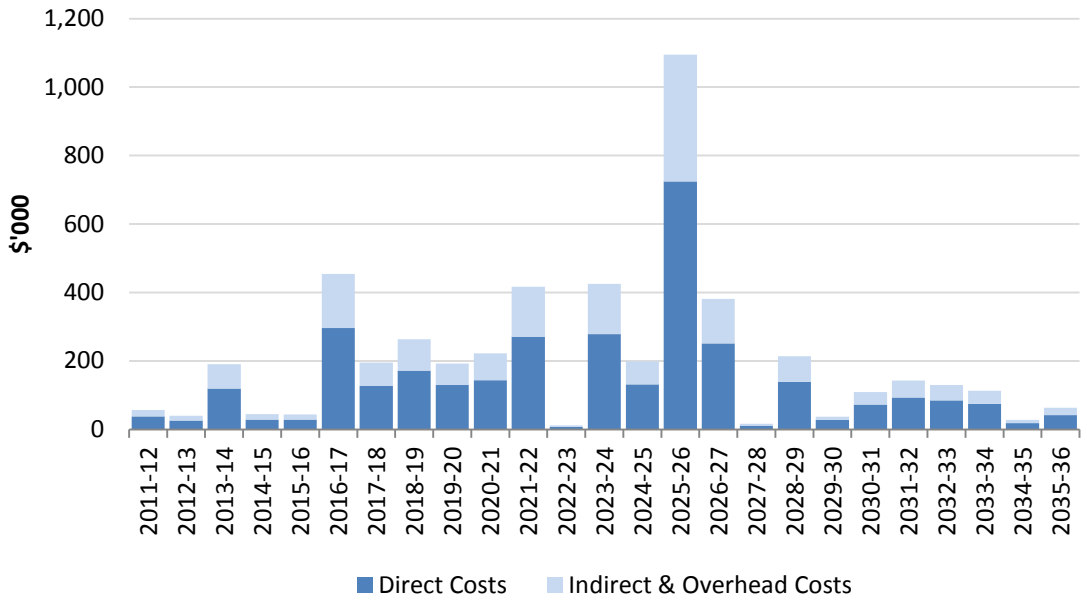
SunWater's forecast renewal expenditure items greater than $10,000 in value, for the years 2011-12 to 2035-36 in 2010-11 dollar terms are provided in **Appendix A**.

Authority's Analysis

Total Costs

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

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



Source: SunWater (2011am).

Item Review

As for past renewals expenditure, Arup and SKM have reviewed the prudency and efficiency of a sample of items. The Authority also requested that SKM review an additional item. Each of the assessed renewals expenditure items are discussed below.

Item 1: Refurbishment of Guard Valve – Peter Faust Dam

SunWater

This item involves refurbishment of the guard valve to fix cracking and corrosion. The expenditure is forecast to occur in 2010-11 at a total cost of $20,000.

Other Stakeholders

No other stakeholders have commented on this item.

Consultant's Review

Arup noted that the guard valve has been in operation from 1990 and has an expected asset life of 40 years. The refurbishment will seek to fix cracking and corrosion that was noted in the 2008 condition assessment, in which a condition score of 4 was assigned. On this basis, Arup consider the expenditure to be prudent.

Arup identified that $15,000 of renewals expenditure forecast for this project is allocated to contractors with the remaining $5,000 for internal SunWater costs. Arup advised that it could not determine the basis for the contractor cost and therefore could not conclude if this amount was efficient. However, Arup did state that it did not think the amount to be unreasonable for the works being proposed.

Authority's Analysis

The Authority notes that, although Arup's recommendation was not conclusive, its judgement was that the expenditure was not unreasonable. On this basis the Authority accepts that the item is prudent and efficient.

Item 2: Kelsey Creek Pipeline – Replacement of Control Equipment

SunWater

This item involves the replacement of control equipment for the Kelsey Creek Pipeline. The expenditure is forecast to occur in 2013-14 at a cost of $99,000 ($79,000 direct).

Other Stakeholders

No other stakeholders have commented on this item.

Consultant's Review

Arup noted that the Kelsey Creek Pipeline control equipment has been in operation from 1996 and has an expected asset life of 15 years. In 2006, it was assigned an overall condition score of 2, indicating that it was still functioning and did not pose a serious risk. The project, originally scheduled for 2010-11, has been moved to 2013-14 with options analysis planned for 2012-13.

Arup identified that the cost of this asset was valued at $61,400 in 2007-08 (Cardno valuation), while the Systems, Application and Products (SAP) system has a current replacement cost of $79,000 taking into account SunWater's internal cost. Arup considered this value to be appropriate and efficient.

Authority's Analysis

The Authority accepts Arup's recommendation that the item is prudent and efficient.

Item 3: Peter Faust Dam – Replacement of Cables and Cableways

SunWater

This item involves the replacement of cables and cableways at the Peter Faust Dam. The expenditure is forecast to occur in 2025-26 at a cost of $1,021,000 ($850,974 direct).

Other Stakeholders

CANEGROWERS (2011a) noted that the replacement of electrical cables at the Peter Faust Dam will have a massive impact on the renewals program.

Consultant's Review

SKM reviewed the item specific replacement/refurbishment report produced by SunWater for this review.

(a) Prudency Review

Asset Replacement/Refurbishment Date Determination

SKM reviewed the Works Management System (WMS) record for this asset confirmed that the asset has been in service since 1990 and noted that the asset was installed as part of the original construction works of the dam.

SKM noted that in SunWater's Whole of Life Maintenance Planning Tool (Master), SunWater has allocated a standard run to failure asset life of 35 years and a maximum condition assessment frequency of every five years. SKM considered that the standard run to failure asset life to be conservative for above ground low voltage (LV) cable. For example, most electrical distribution utilities in Australia would apply an asset life of 45 to 60 years for above ground LV cable depending on whether it is operated in wet (tropical) or dry conditions respectively. SKM considered the condition assessment frequency of every five years applied to this asset type to be reasonable.

SKM noted that for the next future replacement of this asset, the asset life has been set to 30 years. It was not clear why this is the case and could be a data entry error in SAP-WMS. However, this is beyond this current annuity period and hence has no impact on the current renewals value.

SKM advised that SunWater has applied its risk evaluation method to this asset and determined, during the most recent risk assessment in 2004-05, that it has a financial risk criterion consequence rating of moderate (score 18). This, together with a probability (likelihood of occurrence) score of 1 result in an overall risk score of 18 which, under SunWater's risk assessment method, places this asset in a Low risk category. SKM viewed the WMS record for this asset and confirmed that it has been allocated a Low risk rating.

Under SunWater's asset life adjustment policies, where an asset scores a Low or Medium risk and where the worst business criterion consequence score is greater than 8 (Major consequence or above), SunWater reduces the run to failure asset life to a risk adjusted run to failure life of 88% of the asset type run to failure life, in this case 31 years.

The last condition assessment was undertaken in 2007-08 with Conduits (Metal) (Corrosion/Damage) and Cable Pits and Lids (Structural Integrity/Siltation/Vermin) both being allocated a score of 3 (Moderate deterioration with minor refurbishment required to ensure ongoing reliable operation).

SKM noted that SunWater had stated in its report on this renewals item that this [the results of the condition based replacement life adjustment tool] indicates that the decay is less than the standard rate of decay. If the next condition assessment report in 2012-13 has a similar shift, there would be evidence to move the decay curve for this asset to the condition-based end of life projection. However, on a single assessment point in time SKM would not move the [condition decay] curve out.

SKM considered that there is merit, where the latest available condition assessment is high level and or out of date, in not making projected run to failure end of life adjustment decisions based on a single condition assessment. However, this is not the case for this renewals item. The assessment is within date and is relatively detailed. SKM therefore considered that by SunWater not taking cognisance of this condition assessment, and hence not adjusting asset life outwards based on the current condition assessment, SunWater has not adhered to its procedures. Again, whilst SKM accepted that there should be some subjective decision making in this process, for the replacement renewals items reviewed, where a single condition assessment projects a shortening in run to failure asset life, this is invariably adopted.

By having a different process for extending lives over reducing lives, SunWater will, by default, incorporate a bias for the asset replacement dates within its asset portfolio towards earlier than required replacement dates.

SKM also evaluated the projected run to failure asset life using SunWater's condition based replacement life adjustment modelling tool using a 45-year standard run to failure asset life which we consider to be in line with industry norms. Inputting a medium business risk (to take account of the consequences of a score greater than 8) and worst case condition score 3 in 2007-08 for this asset also results in a projected run to failure life of 42 years and a projected required replacement year of 2031-32.

Options Evaluation

SKM advised that no option analysis was sighted for replacement of this item. However SunWater advised that the Peter Faust Dam is scheduled to undergo a comprehensive dam safety inspection during 2013-14 during which time a condition assessment of the cables will occur to refine the scope of works of this project.

SKM also recommended that SunWater conduct electrical condition tests on the cable at this time such as earth impedance-testing, insulation breakdown testing rather than rely on visual inspections.

SKM recognised that a new condition assessment may reveal accelerated condition deterioration which may make it appropriate to bring forward the replacement date in due course.

Conclusion

SKM considered that it is prudent to plan for replacement in 2031-32.

(b) Efficiency Evaluation

SKM noted that for assets that are planned to be replaced five years or more hence of the planning date, SunWater uses a valuation method based on a bill of materials (BOM) for the asset. The BOM has been developed from as built drawings and a 1996-97 value (determined from a 1996-97 valuation) attached to each item making up the BOM based on a 1996-97 valuation. The 1996-97 value for each line is then escalated by a multiplier determined by Cardno in a 2007-08 valuation. This multiplier varies according to the component type being escalated. For example, all electrical equipment should be escalated by a 2.13 multiplier. The sum of costs is then adjusted by an indirect multiplier (in this case 1+47.35%) to take account of renewals item replacement specific factors such location, project management costs etc.

This approach (including the indirect uplift multipliers) has been audited by Arthur Anderson in 1999-00 and found to be robust and appropriate. Given the large portfolio of assets that SunWater is required to determine a replacement value for over a 25-year asset replacement/refurbishment cycle, SKM agreed with Arthur Anderson's conclusions and considered the approach to be appropriate.

SKM reviewed SunWater's calculation for determining a replacement cost and confirmed that it has applied the Indirect Cost multiplier contained in the BOM for this asset item in its SAP-WMS of 47.35%. Whilst this is at the upper end of the range of multipliers used by SunWater to capture asset item specific costs (such as location, project management, engineering), SKM had insufficient information to determine its reasonableness.

SKM benchmarked the renewals item replacement (direct) costs proposed by SunWater as submitted to the Authority against its database costs for a modern equivalent electrical asset, as shown in Table 4.4.

Table 4.4: Peter Faust Dam Cable Replacement Cost Comparison (Direct costs, $2009-10)

SunWater	*SKM*	*Variance*
$850,974	$836,908	+1.6%

Source: SKM (2011).

SKM noted that a Planning Order has not yet been developed for this asset and, as such, SunWater has not developed a breakdown of direct and overhead costs.

SKM considered that the renewals value submitted by SunWater for replacement of this item is within its estimated cost range for a modern equivalent replacement asset. As such, SKM considered the SunWater proposed renewals item value of $850,974 to be efficient.

Summary and Conclusions

SKM did not agree with the timing of the replacement of this asset, but did consider that it is prudent to plan for replacement within this annuity period based on the consequence risk score applied to this asset. From the benchmarking of replacement costs, SKM were satisfied that the renewals item replacement value submitted by SunWater is efficient.

Authority's Analysis

The Authority notes that SKM has benchmarked this item against the direct costs as submitted by SunWater.

The Authority notes that on a comparative basis, the SKM estimate was very similar to the SAP value. The Authority therefore recommends that the item be accepted as prudent and efficient.

Conclusion

In summary, three items for the Proserpine River WSS were sampled, each of which were assessed as being prudent and efficient and have been retained as forecast expenditure.

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

In total, the Authority recommends the direct renewals expenditure be adjusted as shown in Table 4.5.

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

	Item	*Year*	*SunWater ($'000)*	*Authority's Findings*	*Recommended ($'000)*
Sampled Items					
1.	Guard valve refurbishment	2010-11	20	Prudent and efficient	20
2.	Kelsey Creek Pipeline – Replacement of control equipment	2013-14	79^	Prudent and efficient	79
3.	Peter Faust Dam – Replacement of cables and cableways	2025-26	1,021^	Prudent and efficient	1,021
Non-Sampled Items					10% saving applied

Note: ^ Direct expenditure component. Source: SunWater (2011), Arup (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

Proserpine District Canegrowers Cooperative Limited and Proserpine Sugar Milling Association Limited (2010) submitted that there should be increased transparency and consultation at an individual scheme level on the specific aspects of asset management plans.

Authority's Analysis

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

The Authority recommends that there be a legislative requirement for SunWater to consult with its customers about any changes to its service standards and proposed renewals expenditure program. SunWater should also be required to submit the service standards and renewals

expenditure program to irrigators for comment whenever they are amended and that irrigators' comments be documented and published on SunWater's website and provided to the Authority.

4.7 Allocation of Headworks Renewals Costs According to WAE Priority

Previous Review

For the 2006-11 price path, the renewals costs for the Proserpine River WSS bulk water infrastructure were apportioned between priority groups using converted nominal water allocations. The conversion to medium priority WAE was determined by a WPCF of 1.7:1; that is, one ML of high priority WAE was considered equivalent to 1.7 ML of medium priority WAE.

Stakeholder Submissions

SunWater

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

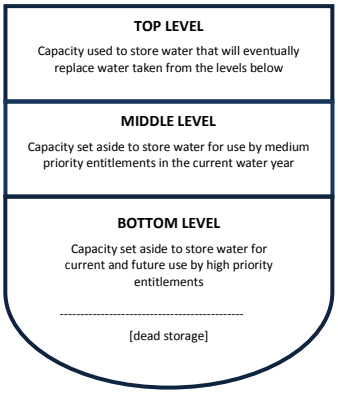
SunWater submitted that, in general, the HUF allocates a greater proportion of capital costs per ML to high priority WAE. Specifically, the HUF methodology takes into account water sharing rules, critical water sharing arrangements (CWSAs) and other operational requirements that typically give high priority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

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

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

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

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



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

Step 4: Assess the hydrological performance in 15-year

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

sequences for each of the layers identified in Step 3 to determine the probability of each component of headworks storage being accessible to the relevant priority group.

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

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

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

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

The parameters used for determining the HUFs for the Proserpine River WSS are summarised in Table 4.6. The HUFs for this scheme (SunWater, 2010d) are 27% for medium priority and 73% for high priority.

Other Stakeholders

Proserpine District Canegrowers Cooperative Limited and Proserpine Co-operative Sugar Milling Association Limited (2010) submitted that they agree with the principle of HUFs and noted that it seems appropriate that HUFs should be determined on the basis of the performance of each scheme over the 15-year term which reflects the poorest hydrological performance for supply for medium priority use.

Authority's Analysis

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

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

SunWater (2011x) accepted these recommendations and submitted recalculated HUFs for each scheme (Table 4.7). For the Proserpine River WSS, the changes resulted in the HUF_{mp} value rising from 27% to 29%, and the HUF_{hp} value falling from 73% to 71%.

The Authority estimates that based on the HUF methodology, the conversion for medium priority to high priority would be 4.2:1. This compares with the water pricing conversion factor of 1.7:1 used for 2006-11 price paths. Further, the Authority notes that under the HUF approach, medium priority irrigators will now pay 29% of the cost of renewals whereas previously medium priority irrigators paid 50%.

Table 4.6: Application of HUFs Methodology

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

Nominal Group	(ML)	HUF Group	(ML)
Medium Priority	38,075	MP_A	38,075
High Priority	22,000	HP_A	22,000

STEP 2: ROP Conversion Factor Adjustment

Conversion Factor: ROP_{CF}	N/A
Maximum volume that can be converted to HP: $HP_A max$	22,000
Corresponding volume of MP: $MP_A min = MP_A-(HP_A max-HP_A)*ROP_{CF}$	38,075

STEP 3: Water Sharing Rules & Operational Requirements

Water Sharing Rules	
Volume below which MP not available: $MP_0 AA$	69,965
Volume above which max.MP available: $MP_{100} AA$	127,055
CWSAs and other operational requirements	
Likely increase in volume effectively reserved for HP: MP_0	69,965
Likely increase in min. storage before maximum MP available: MP_{100}	127,055
Key Dam Level Measures	
Full Supply Level: FSV_{hwks}	491,400
Dead Storage Level: DSL_{hwks}	970

STEP 4: Hydrologic performance of headworks storage

Storage Layer	Storage Capacity (ML)	Prob. of Utilisation	Utilised Capacity (ML)
Top: $\max\{(FSV_{hwks}-MP_{100}),0\}$*	MP_2 = 164,972; HP_2 = 193,372	2%	MP_{2u}= 3,965; HP_{2u} = 4,792
Middle: $\min\{(MP_{100}-MP_0),(FSV_{hwks}-MP_0)\}$	MP_1 = 57,090	33%	MP_{1u} = 18,963
Bottom: $MP_0 - DSV_{hwks}$	HP_1 = 68,995	84%	HP_{1u} = 58,080

STEP 5: Calculation of HUFs for each Water Entitlement Group

Formula	HUF Group	Nominal Group
MP_A: $(MP_{1u}+MP_{2u}) / (MP_{1u}+HP_{1u}+MP_{2u}+HP_{2u})$ = (18,963+3,965) / (18,963+58,080+3,965+4,792)	HUF_{mp} = 27%	Medium Priority = 27%
HP_A: $(HP_{1u}+HP_{2u}) / (MP_{1u}+HP_{1u}+MP_{2u}+HP_{2u})$ = (58,080+4,792) / (18,963+58,080+3,965+4,792))	HUF_{hp} = 73%	High Priority = 73%

**Apportioned between MP2 and HP2 using the ratio MP_1:HP_1. Source: SunWater (2010d).*

Table 4.7: Revised HUF Calculations

STEP 4: Hydrologic performance of headworks storage			
Storage Layer	**Storage Capacity (ML)**	**Prob. of Utilisation**	**Utilised Capacity (ML)**
Top layer			
Initial	MP_2 = 164,972; HP_2 = 193,372	2%	MP_{2u}= 3,965; HP_{2u} = 4,792
*Revised**	MP_2 = 230,919; HP_2 = 133,426	no change	MP_{2u}= 5,551; HP_{2u} = 3,207
Middle Layer	MP_1 = 57,090	33%	MP_{1u} = 18,963
Bottom Layer	HP_1 = 68,995	84%	HP_{1u} = 58,080

STEP 5: Calculation of HUFs for each Water Entitlement Group			
	Initial	**Revised**	**Nominal Group**
HUF_{mp}	27%	29%	Medium Priority = 29%
HUF_{hp}	73%	71%	High Priority = 71%

**Apportioned between MP_2 and HP_2 using the ratio of nominal volumes (MP_A:HP_A). Source: SunWater (2011x).*

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 Proserpine River WSS, the recommended renewals annuity for the 2012-17 regulatory period is shown in Table 4.8. The renewals annuity for 2006-11 and SunWater's proposed annuity for 2012-16 is also presented for comparison.

Table 4.8: Proserpine River WSS Renewals Annuity (Real $'000)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Total SunWater	61	64	60	74	75	207	205	204	202	198	198
Total Authority	-	-	-	-	-	-	197	194	191	186	182
High Priority	-	-	-	-	-	-	133	131	129	125	122
Medium Priority	-	-	-	-	-	-	65	64	63	61	60

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 assigning operating costs to service contracts[2] and to different priority customer groups (within each service contract).

5.2 Total Operating Costs

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

Non-direct costs are classified as either:

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

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

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

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

(a) an Operations Officer is located at the Peter Faust Dam and 10 staff are located at the Eton depot). They are responsible for day-to-day water supply management and delivery of the programmed works for all users in the region. Specialist operations, in areas such as communication systems, electrical, mechanical and civil engineering, are provided

[2] 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.

centrally with resources shared across all schemes. These personnel are located in Brisbane, Ayr and Bundaberg;

(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 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).

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

Storage	***Monthly Monitoring Requirements***			
	Inflow	***Head Water***	***Tail Water***	***BGA***
Peter Faust Dam	No	Yes	Yes	Yes

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

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

Routine dam safety inspections are carried out monthly on Peter Faust Dam. Specific dam safety inspections include monitoring of embankments, piezometers, seepage and the general condition of the storages as defined in the dam surveillance specification. They also include condition inspections to identify and plan maintenance requirements and to provide information for management planning of water delivery assets;

(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; and

(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. However, recreation facilities at Peter Faust Dam

continue to be operated and maintained by SunWater (the cost of which is outlined below); and

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

Previous Review

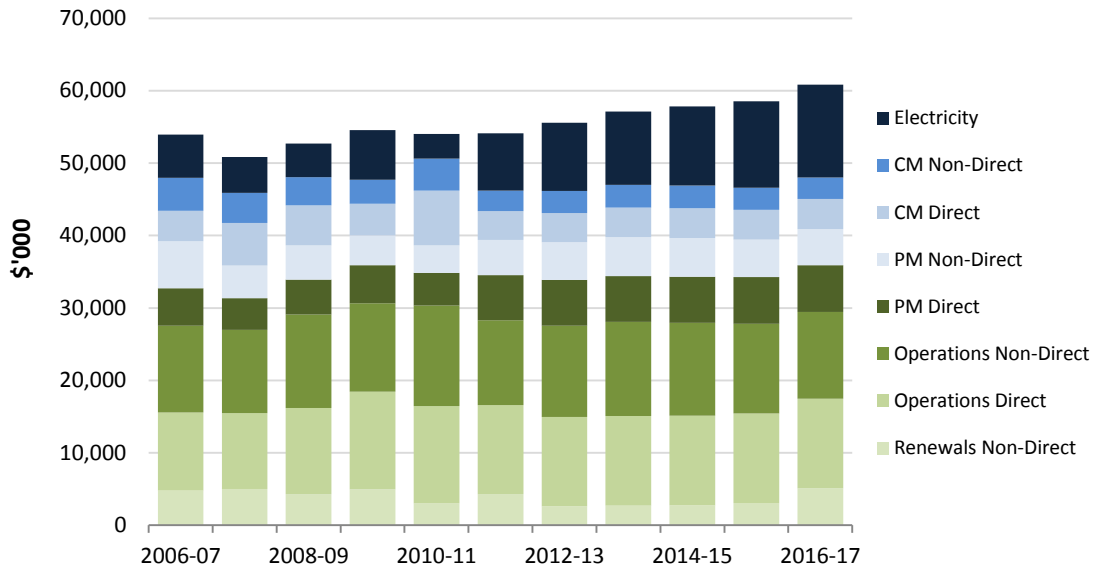
For the 2006-11 price paths, Indec identified annual cost savings of between $3.8 million and $5.5 million (2010-11 dollars) or 7.5% to 9.9% of total annual costs, which SunWater was to achieve during the 2006-11 price paths (SunWater, 2006a). See Volume 1.

Stakeholder Submissions

SunWater

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

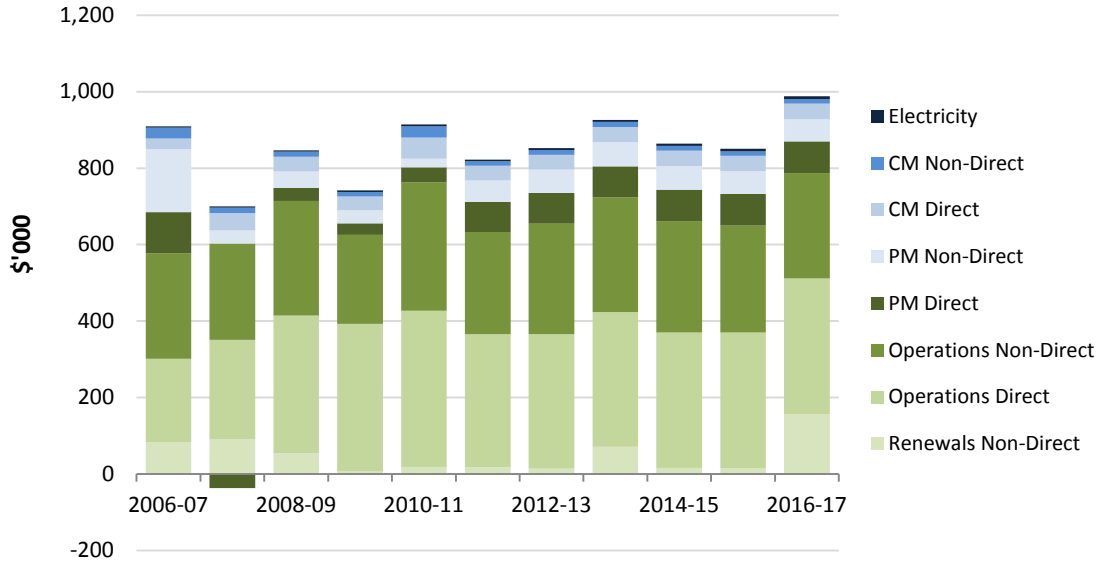
Figure 5.1: SunWater's Total Operating Costs (Real $) – All Service Contracts



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

Expenditure by activity in the Proserpine River WSS (all sectors) is shown in Figure 5.2, Table 5.2 and Table 5.3.

Figure 5.2: Total Operating Costs – Proserpine River WSS (Real $)



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

Table 5.2: 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	493	513	660	617	744	615	640	653	646	635	630
Electricity	3	3	3	4	5	4	5	6	6	7	7
Preventive Maintenance	273	-3	77	65	62	135	141	145	144	142	141
Corrective Maintenance	57	60	52	48	85	50	51	52	53	53	52
Renewals Non-Direct	84	90	54	8	19	18	15	71	16	15	157
Total	**909**	**663**	**847**	**742**	**914**	**822**	**852**	**926**	**864**	**851**	**988**

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

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	129	122	152	134	149	167	169	169	169	169	169
Electricity	3	3	3	4	5	4	5	6	6	7	7
Contractors	-12	5	75	80	68	96	98	99	101	102	102
Materials	103	20	46	58	114	63	64	64	65	66	66
Other	133	123	160	179	172	140	140	140	140	140	141
Non-Direct	553	390	410	287	407	352	377	448	383	367	502
Total	**909**	**663**	**847**	**742**	**914**	**822**	**852**	**926**	**864**	**851**	**988**

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

In its NSP, SunWater submitted that operating costs for this scheme averaged $572,000 per annum 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 $658,000 per annum.

Other Stakeholders

CANEGROWERS (2011a) noted that total lower bounds costs for the irrigation sector of this scheme were set by Indec in 2006 to be $575,000 in 2010-11 dollars. However, the SunWater estimates are around $103,000 (18%) lower than this figure. CANEGROWERS considered that this is a very good result and suggests that SunWater has been able to absorb the majority of the inflation cost increases for the Proserpine River WSS over the past six years. Consequently costs are only 3% higher in 2011-12 compared to 2005-06 in nominal terms.

CANEGROWERS Proserpine submitted that the classification of fixed and variable costs is subjective. For example, costs to control Mimosa Pigra would vary from year to year, dependent on the water level of Peter Faust Dam and the ability to undertake the necessary eradication program. Costs associated with maintenance and presentation of recreational facilities would also vary in a similar manner.

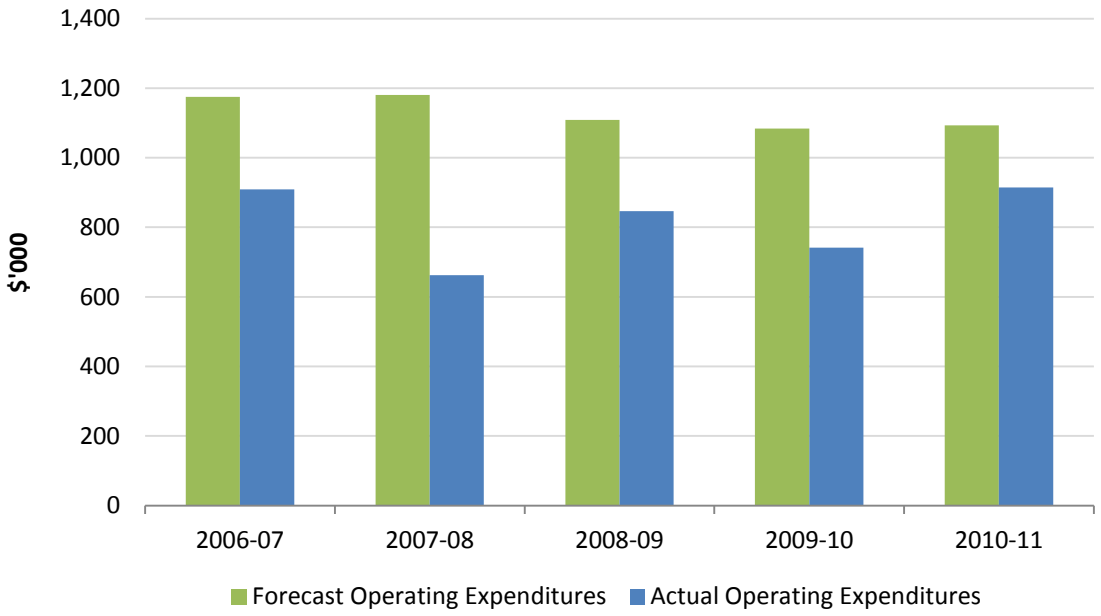
Authority's Analysis

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

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

In 2010-11, the Authority engaged Indec to assess whether SunWater achieved the cost savings forecast for 2005-06. A comparison of forecast and actual operating costs for the Proserpine River WSS is shown in Figure 5.3.

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



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

Indec has not, however, inferred from its analysis that SunWater should alter its costs over the 2012-17 regulatory period to the level of efficient costs determined for 2010-11. It observed that further analysis would be required to justify and support such an inference (see Volume 1). The Authority has engaged other consultants to address potential scheme specific cost savings.

In response to CANEGROWERS Proserpine, the classification of fixed and variable costs is discussed further below and in the following chapter.

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, which SunWater categorises as either overheads or indirect costs, is detailed in Volume 1.

Previous Review

As noted above, in the previous review, Indec reviewed SunWater's non-direct costs for 2006-11. Non-direct costs were allocated to schemes on the basis of using total direct costs.

Stakeholder Submissions

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

Total non-direct costs and those allocated to the Proserpine River WSS are in Table 5.4.

Table 5.4: SunWater's Actual and Proposed Non-Direct Costs (Real $'000)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
SunWater	27,831	25,097	25,872	24,579	25,152	23,770	23,512	24,244	24,055	23,708	25,089
Proserpine River	553	390	410	287	407	352	377	448	383	367	502

Source: SunWater (2011)

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

CANEGROWERS (2011a) and KCWB (2011) noted that 55% of operations costs are overheads.

CANEGROWERS Proserpine (2011) noted that indirects and overheads are projected to increase by almost 19% between 2010 and 2011.

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 savings of $495,314 (in 2010-11 real terms) per annum in finance, human resources, information technology, and health, safety, environmental and quality areas (for the whole of SunWater).

Deloitte was unable to draw any definitive conclusions from an attempt to benchmark against Pioneer Valley Water Board (PVWater) and other Australian rural water service providers. Deloitte noted that PVWater's non-direct costs were higher than those of SunWater as a percentage of total operating costs – but that there are differences between PVWater and SunWater which made the comparison unreliable.[3]

The Authority accepts 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 and 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.

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 (targeted DLC); and

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

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

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

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

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	553	390	410	287	407	352	377	448	383	367	502
Authority	-	-	-	-	-	-	366	430	362	341	463

Source: SunWater (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 of direct operating expenditure by activity is set out in Table 5.6. These estimates reflect SunWater's most recent positions and differ from the NSP. The estimates also reflect the most recent information provided by SunWater to the Authority in October 2011.

Table 5.6: SunWater Direct Operating 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	218	261	360	385	408	348	351	353	354	355	355
Electricity	3	3	3	4	5	4	5	6	6	7	7
Preventive Maintenance	108	-37	35	30	39	79	80	81	82	82	82
Corrective Maintenance	28	46	38	36	55	38	39	39	40	40	40
Total	**356**	**273**	**436**	**455**	**507**	**470**	**476**	**479**	**481**	**484**	**485**

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

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

Table 5.7: SunWater Direct Operating Expenditure by Type (Real $'000)

	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Labour	129	122	152	134	149	167	169	169	169	169	169
Electricity	3	3	3	4	5	4	5	6	6	7	7
Contractors	-12	5	75	80	68	96	98	99	101	102	102
Materials	103	20	46	58	114	63	64	64	65	66	66
Other	133	123	160	179	172	140	140	140	140	140	141
Total	**356**	**273**	**436**	**455**	**507**	**470**	**476**	**479**	**481**	**484**	**485**

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 Arup to review the prudency and efficiency of SunWater's proposed direct operating expenditure for this scheme. Arup's review involved:

(a) site inspections and discussions with local managers to appraise the efficiency of work practices, operators' knowledge of assets and day-to-day operation issues;

(b) discussions with irrigators to identify, understand and verify key issues; and

(c) a desktop assessment of data provided by SunWater in order to:

(i) compare historical actual and forecast data;

(ii) investigate operational forecasts based on historical trends and field observations;

(iii) understand historical trends in line with actual water usage; and

(iv) understand how systems have been modified with respect to management of operating expenditure.

Arup reviewed the extent to which SunWater's operating expenditure forecasts are based on appropriate cost drivers (including water use), and the cost escalation methods and factors used to prepare them. The assessment was undertaken having regard to the conditions prevailing in relevant markets, historical trends, relevant interstate and international benchmarks, and SunWater's service standards and compliance requirements.

Arup reported, however, that SunWater's information systems were not specifically designed for the provision of information to assess prudency and efficiency. In particular, the information provided by SunWater did not sufficiently enable costs to be connected with the discharge of specific service obligations. Arup also noted that operational and procedural changes following the SLFI review and the introduction of ROPs may have made the extraction and reconciliation of such information difficult.

Arup advised that since the information provided by SunWater did not afford the ability to "drill down" into costs to adequately review prudency and efficiency, their assessment of direct operating expenditure was limited to a general review of SunWater's processes, procedures and trend.

On this basis, Arup considered that SunWater's policy and procedural documents are broadly consistent with industry practice, and that SunWater has demonstrated the adoption and integration of them into their management system. Site visits also showed that field personnel are gradually adopting these systems and processes.

Arup acknowledged that SunWater continually reviews policies and procedures to take account of changed market conditions, with the aim of streamlining operations across the organisation. While in some instances observing such changes from a regional perspective may give the impression that the changes are inefficient, Arup considered that when observed from a state-wide perspective, significant efficiencies are being made.

Arup concluded that, in general, the procedures adopted are prudent and SunWater is undertaking work to make its operations more efficient.

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.

Arup'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 (WHS) compliance, administration, and environmental and land management.

SunWater's operating expenditure forecasts have been developed on the basis of detailed work instructions and operational manuals for each scheme. SunWater's proposed operations costs are set out in Table 5.6.

SunWater advised that it continues to operate and maintain recreation facilities at Peter Faust Dam (Table 5.8).

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

	2011-12	*2012-13*	*2013-14*	*2014-15*	*2015-16*
Recreational Facility Cost	76	78	80	78	78

Source: SunWater (2011).

Other Stakeholders

Proserpine District Canegrowers Cooperative Limited and Proserpine Co-operative Sugar Milling Association Limited (2010) submitted that, in general, recreation costs should not be recovered from SunWater customers but from the communities that benefit from the use of these facilities.

CANEGROWERS (2011a) and KCWB (2011) also identified recreation costs as an area of concern.

CANEGROWERS Proserpine (2011) noted that SunWater has actively sought to minimise operational costs across the organisation. However, although structural changes during 2008-09 yielded some significant benefits in the final year of the current price path, most of these benefits will have dissipated by 2010-11 and operational costs are projected to increase steadily over the next price path. CANEGROWERS Proserpine noted that SunWater maintains that the majority of the cost increase is associated with controlling the noxious weed, Mimosa Pigra. Hence, given the current and expected levels of Peter Faust Dam over the next few years, eradication programs are likely to be curtailed resulting in lower control costs.

Authority's Analysis

Consultant's Review

Arup noted that key drivers affecting operating expenditure include WHS, environmental obligations (such as ROLs and ROPs) and dam safety obligations.

In meeting these obligations, Arup considered that a smaller water service provided may be able to take a more relaxed approach and, in effect, accept a higher level of risk. However, for a large organisation such as SunWater, the financial risks of not meeting these obligations are significant.

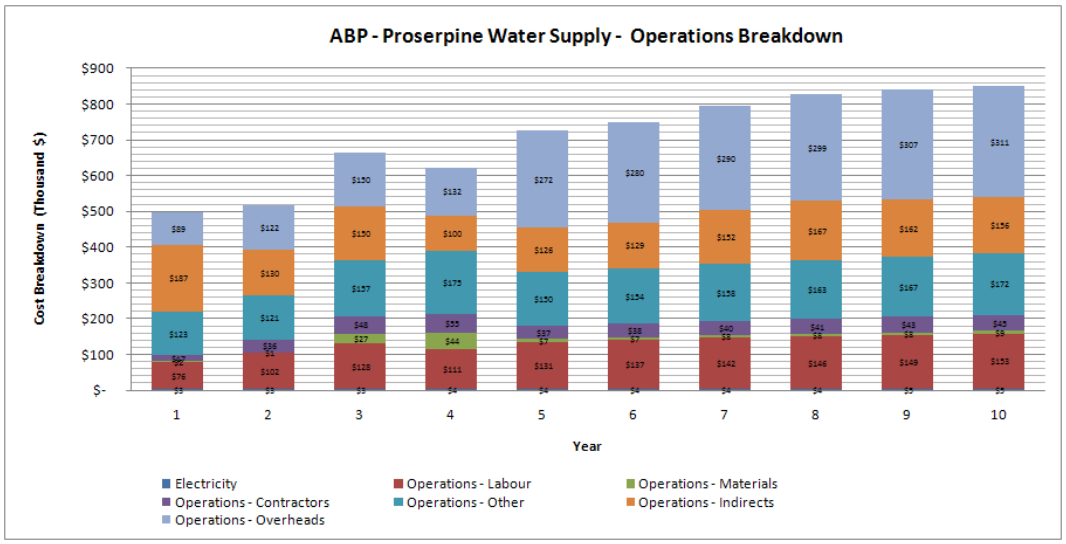
In reviewing operating expenditure for the Proserpine River WSS (Figure 5.4), Arup noted that:

(a) overall there have been no marked changes to the trend in operating expenditure over time;

(b) the largest components are scheme management, scheduling and delivery of water, and environmental management; and

(c) labour costs are generally rising in line with indexation, although there has been a decline since 2008-09 which could be attributed to the SLFI Review.

Figure 5.4: Breakdown of Operating Expenditure – Proserpine River WSS



Note: Data in figure based on NSP and may differ from most recent SunWater data. Source: Arup (2011).

Arup did not recommend an adjustment to SunWater's operations costs for this scheme.

Conclusion

The Authority notes that Arup did not recommend any adjustment to operations costs for this scheme.

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

In relation to recreation costs, the Authority notes that the Ministerial Direction requires that the Authority set prices to recover prudent and efficient recreation management costs.

The Authority notes that the consultants engaged to review operations costs in other SunWater schemes (Halcrow (2011), GHD (2011) and Aurecon (2011)) also did not recommend any adjustment to operations costs.

On the basis of the consultants' reviews, the Authority has not specifically adjusted SunWater's operations expenditure forecast.

Item 2: Preventive Maintenance

Stakeholder Submissions

SunWater

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

Preventive maintenance includes:

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

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

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

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

Other Stakeholders

No other stakeholders have commented on this item.

Authority's Analysis

Consultant's Review

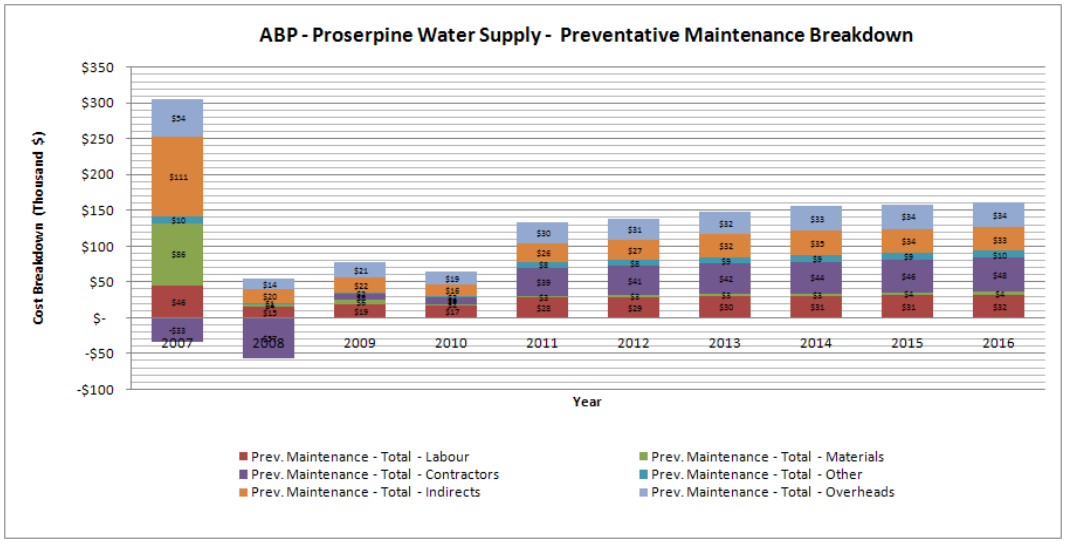
Arup noted that PB were engaged by SunWater in 2010 to assess the organisation's preventive maintenance work instructions and associated costs, and establish a confidence level of planned baseline costs for 2010-11 for all services contracts.

Arup requested a formal statement from SunWater as to how the outcomes of this assessment had been incorporated into preventive maintenance forecasts, including details of what initiatives had been or are scheduled to be put in place. However, on the basis of the information provided, Arup were not able to determine how PB's revised forecasts had been integrated into the NSP forecasts.

In reviewing preventive maintenance for the Proserpine River WSS, Arup noted that costs have been smoothed over time, taking into account historical variability (Figure 5.5).

Arup further noted that the large preventive maintenance cost incurred in 2006-07 can be attributed to weed control. In regards to the issue of the negative costs incurred in 2006-07 and 2007-08, Arup were advised by SunWater that it arose from the clearing of an accounting provision of $772,000 made for Mimosa Pigra weed eradication. The original provision was made around 2002-03, the balance of which (approximately $100,000) was cleared over two years against "contractors" under Preventive Maintenance - Weed Control. The clearance amounts were greater than actual spend in both these years resulting in negative values appearing in the reported figures.

Figure 5.5: Breakdown of Preventive Maintenance Expenditure – Proserpine River WSS



Note: Data in figure based on NSP and may differ from most recent SunWater data. Source: Arup (2011).

Arup did not recommend an adjustment to SunWater's preventive maintenance expenditure for this scheme.

Conclusion

The Authority notes that Arup did not recommend any adjustment to preventive maintenance expenditure for this scheme.

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

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

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

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

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

For this scheme, the Authority did not specifically adjust SunWater's preventive maintenance expenditure forecast.

Item 3: Corrective Maintenance

Stakeholder Submissions

SunWater

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 corrective maintenance costs are set out in Table 5.6.

Other Stakeholders

No other stakeholders have commented on this item.

Authority's Analysis

Consultant's Review

Arup noted that corrective maintenance forecasts are based on actual spends from the last four years.

Although, SunWater advised Arup that it has sought to review the balance between corrective and preventive maintenance, Arup reported that they were not provided with any formal documentation indicating the exact methodology used to prepare the correctively maintenance forecasts.

Arup also noted that if adopted, the RCM approach recommended by PB (2010) would seek to optimise the process by which maintenance is undertaken and, in doing so, would also optimise the balance between preventive and corrective maintenance.

Arup did not recommend an adjustment to SunWater's corrective maintenance expenditure for this scheme.

Conclusion

The Authority notes that Arup did not recommend any adjustment to corrective maintenance expenditure for this scheme.

As noted above, in Volume 1, the Authority recommended an optimal mix of preventive and corrective maintenance should be pursued by SunWater. Further, for corrective maintenance,

the Authority recommended that SunWater formally document its processes for the development of correct maintenance expenditure forecasts.

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

Item 4: Electricity

Stakeholder Submissions

SunWater

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

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

SunWater submitted that since the Proserpine River WSS does not have pump stations, electricity use is low (Table 5.6). Electricity is only required for lighting and activities such as the opening and closing of valves.

Other Stakeholders

No other stakeholders have commented on this item.

Authority's Analysis

Consultant's Review

Arup noted that SunWater has undertaken extensive cost-benefit analyses into when and where it should adopt contestable or franchise tariffs. In particular, specialist consultants in this field have been employed to advise SunWater on such strategies and for this scheme the current advice is to run a franchise tariff.

Arup did not recommend an adjustment to SunWater's electricity expenditure for this scheme.

Conclusion

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

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

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

The Authority has adjusted proposed electricity costs as set out in Table 5.9.

Item 5: Cost Escalation

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

Direct Labour

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

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

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

Direct Materials and Contractors

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

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

Other Costs

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

Conclusion

A comparison of SunWater's and the Authority's direct operating costs for the Proserpine River WSS is set out in Table 5.9.

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

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

	SunWater					*Authority*				
	2012-13	***2013-14***	***2014-15***	***2015-16***	***2016-17***	***2012-13***	***2013-14***	***2014-15***	***2015-16***	***2016-17***
Operations	351	353	354	355	355	340	341	341	342	341
Electricity	5	6	6	7	7	4	5	5	5	5
Preventive Maintenance	80	81	82	82	82	78	78	79	79	79
Corrective Maintenance	39	39	40	40	40	38	38	38	38	38
Total	**476**	**479**	**481**	**484**	**485**	**460**	**462**	**463**	**464**	**463**

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

5.5 Cost Allocation According to WAE Priority

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

Previous Review

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

Stakeholder Submissions

SunWater

SunWater (2011j) 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 WAE.

For the purposes of allocating operating costs in this scheme SunWater submitted that the total WAE is 60,075 ML, of which 38,075 ML (63%) is medium priority.

Other Stakeholders

No other stakeholders have commented on this issue.

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 Proserpine River 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 5.10. The Authority's recommended operating costs are set out in Table 5.11.

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

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations					
Labour	135	135	135	135	135
Materials	38	39	39	40	40
Contractors	38	38	39	40	40
Other	140	140	140	140	141
Non-Direct	288	300	292	280	275
Preventive Maintenance					
Labour	29	29	29	29	29
Materials	11	11	12	12	12
Contractors	40	41	42	42	42
Other	0	0	0	0	0
Non-Direct	61	64	62	59	58
Corrective Maintenance					
Labour	5	5	5	5	5
Materials	14	14	15	15	15
Contractors	20	20	20	20	20
Other	0	0	0	0	0
Non-Direct	12	13	13	12	12
Electricity	5	6	6	7	7
Total	**838**	**855**	**848**	**836**	**831**

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

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

	2012-13	*2013-14*	*2014-15*	*2015-16*	*2016-17*
Operations					
Labour	131	132	133	134	135
Materials	37	37	37	38	37
Contractors	37	37	37	37	37
Other	136	135	134	133	132
Non-Direct	281	288	276	260	252
Preventive Maintenance					
Labour	28	28	28	28	28
Materials	11	11	11	11	11
Contractors	39	39	40	40	40
Other	0	0	0	0	0
Non-Direct	60	61	59	55	53
Corrective Maintenance					
Labour	5	5	5	5	5
Materials	14	14	14	14	14
Contractors	19	19	19	19	19
Other	0	0	0	0	0
Non-Direct	12	12	12	11	11
Electricity	4	5	5	5	5
Total	**813**	**823**	**809**	**791**	**780**

Source: QCA (2011).

6. DRAFT PRICES

6.1 Background

Ministerial Direction

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

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

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

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

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

In considering the tariff structures, the Authority is to have regard to the fixed and variable nature of the underlying costs. The Authority is to adopt tariff groups as proposed in SunWater's network service plans and not to investigate additional nodal pricing arrangements.

The Ministerial Direction also requires that:

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

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

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

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

Previous Review

In the 2006-11 price paths, real price increases over the five years were capped at $10/ML for relevant schemes. The cap applied to the sum of Part A and Part B real prices. In each year of the price path, the prices were indexed by the consumer price index (CPI). Interim prices in 2011-12 were increased by CPI with additional increases in some schemes.

For the Proserpine River WSS, prices over 2006-12 were increased by CPI.

6.2 Approach to Calculating Prices

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

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

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

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

(d) calculated cost-reflective irrigation prices;

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

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

6.3 Total Costs

The Authority's estimate of prudent and efficient total costs for the Proserpine River 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 Proserpine River 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	717	466	680	637	801	842	873	890	880	864	859
Renewals Annuity	61	64	60	74	75	207	205	204	202	198	198
Operating Costs	826	572	792	734	896	805	838	855	848	836	831
Revenue Offsets	-170	-170	-173	-170	-170	-169	-169	-169	-169	-169	-169
Authority's Total Costs	-	-	-	-	-	-	841	849	832	809	793
Renewals	-	-	-	-	-	-	197	194	191	186	182
Operating Costs	-	-	-	-	-	-	813	823	809	791	780
Revenue Offsets	-	-	-	-	-	-	-169	-169	-169	-169	-169
Return on Working Capital	-	-	-	-	-	-	1	1	1	1	1

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

6.4 Fixed and Variable Costs

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

SunWater submitted that all of its operating costs are fixed in the Proserpine River 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. All other activities and expenditure types would be expected to be semi-variable, including: labour, material, contractor and other direct costs, maintenance, operations and renewals expenditures;

(b) 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;

(c) costs that *should* vary with water use under Indec's proposed optimal (prudent and efficient) management approach (this approach is outlined in Volume 1). On average across all SunWater's bulk schemes, Indec considered 93% of costs would be fixed and 7% variable under optimal management. However Indec proposed that scheme-specific tariff structures should be applied, to reflect the relevant scheme costs.

For the Proserpine River WSS, Indec recommended 89% of costs should be fixed and 11% variable under optimal management. The Authority notes that this ratio differs from the current tariff structure which for river customers reflects the recovery of 59% of costs in the fixed charge and 41% in the volumetric charge, and for KCWB customers reflects the recovery of 66% in the fixed charge and 34% in the volumetric charge.

In general, the Authority accepts Indec's recommended tariff structure for the reasons stated by Indec as 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	730	737	722	701	687
High Priority	452	456	447	435	426
Medium Priority	278	281	275	266	261

Note: Net fixed costs are net of revenue offsets and return on working capital. Source: Actual Costs (SunWater, 2011ap) and Total Costs (QCA, 2011).

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

Variable Costs

Variable costs are allocated to all users on the basis of water use. Volumetric tariffs are calculated based on SunWater's eight-year historical water usage data for all sectors. However, consistent with SunWater's assumed typical year for operating cost forecasts, the Authority has removed from the eight years of data, the three lowest water-use years for each service contract. Accordingly, to determine the volumetric charge, the Authority has assumed historical total water use for all sectors to be 62.1% of WAE.

6.6 Cost Reflective Prices

Cost-reflective prices reflect the Authority's estimates of prudent and efficient costs, recommended tariff structures, and the allocation of costs to different priority groups.

Table 6.3: Medium Priority Prices for the Proserpine River WSS ($/ML)

	Actual Prices						*Cost Reflective Prices*				
	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
River											
Fixed (Part A)	7.52	7.76	8.12	8.36	8.64	8.92	7.27	7.45	7.64	7.83	8.03
Volumetric (Part B)	7.48	7.70	8.07	8.32	8.58	8.88	3.00	3.08	3.16	3.23	3.32
River (Kelsey Creek Water Board)											
Fixed (Part A)	7.52	7.76	8.12	8.36	8.64	8.92	7.27	7.45	7.64	7.83	8.03
Volumetric (Part B)	5.55	5.71	5.98	6.17	6.36	6.59	3.00	3.08	3.16	3.23	3.32

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

6.7 Queensland Government Pricing Policies

As noted above, the Queensland Government has directed that:

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

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

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

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

Authority's Analysis

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

The Authority has calculated these current revenues using the relevant 2010-11 prices, current irrigation WAE and the five-year average (irrigation only) water use during 2006-11. For this scheme, current revenues in both the River and Kelsey Creek tariff groups are above the level required to recover prudent and efficient costs (Table 6.4). Therefore, the Authority is required to recommended prices that maintain these revenues in real terms for the 2012-17 regulatory period.

Table 6.4: Comparison of Current Prices and Cost-Reflective Prices (Real $2012-13)

Tariff Group	*2011-12 Prices (indexed to $2012-13)*		*Irrigation WAE (ML)*	*Irrigation Water Use(ML)*	*Current Revenue*	*Revenue from Cost-Reflective Tariffs*	*Difference*
	Fixed	*Variable*					
River	9.08	9.01	28,075	10,097	345,867	234,514	111,352
Kelsey Creek	9.08	6.68	10,000	3,596	114,806	83,531	31,274

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

6.8 The Authority's Recommended Prices

The Authority's recommended prices to apply to the Proserpine River 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: Recommended Medium Priority Prices for the Proserpine River WSS ($/ML)

	Actual Prices						*Recommended Prices*				
	2006-07	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*
River											
Fixed (Part A)	7.52	7.76	8.12	8.36	8.64	8.92	10.51	10.77	11.04	11.32	11.60
Volumetric (Part B)	7.48	7.7	8.07	8.32	8.58	8.88	3.00	3.08	3.16	3.23	3.32
River (Kelsey Creek Water Board)											
Fixed (Part A)	7.52	7.76	8.12	8.36	8.64	8.92	9.67	9.91	10.16	10.41	10.67
Volumetric (Part B)	5.55	5.71	5.98	6.17	6.36	6.59	3.00	3.08	3.16	3.23	3.32

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

6.9 Impact of Recommended Prices

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

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APPENDIX A: FUTURE RENEWALS LIST

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

Asset	*Year*	*Description*	*Value ($'000)*
Kelsey Creek Pipeline	2011-12	11PROXX - REFURBISH INTERNAL CONDITION	19
		Kelsey Creek Pipeline - Control System Options Analysis	12
	2013-14	Replace Control Equipment	99
	2016-17	Replace Protection Wks @ 556M & 630M	66
		Replace Scour Outlet At 916.7M	30
		Replace Scour Outlet At 205.4M	25
		Replace Scour Outlet At 1315.1M	20
		Replace Scour Outlet At 1601.0M	20
		Replace Scour Outlet At 1876.8M	20
		Replace Air Valve At 361.5M	11
	2026-27	Kelsey Creek Pipeline - Control System Options Analysis	12
	2028-29	Replace Control Equipment	97
	2029-30	Kelsey Creek Pipeline - Condition Assessment	12
Peter Faust Dam	2011-12	Repaint Armco guardrail @ 15yrs.	24
	2012-13	Refurbish/Overhaul Hydraulics unit	12
	2013-14	Study: 5yr Dam Comprehensive Inspection (by 1 Dec 2013)	88
	2014-15	Peter Faust Dam - Inlet Tower Bridge Recaulk Joints and Renew Asphalt	25
		Peter Faust Dam - Patch Paint Trash Racks	19
	2015-16	Peter Faust Dam - Spillway Bridge Recaulk Joints and Renew Asphalt	44
	2016-17	Peter Faust Dam - Shelter Shed (Paint Interior and Exterior)	15
		Peter Faust dam - Toilet Block (Paint Interior and Exterior)	15
	2018-19	Study: 5yr Dam Comprehensive Inspection (by 1 Dec 2013)	87
	2019-20	10PRO03-PFD CRANES 10YR INSPECTION	16
		Refurbish/Overhaul Hydraulics unit	12
	2020-21	Peter Faust Dam - Patch Paint Trash Racks	19
		Refurbish - Patch paint and seal	12
	2021-22	Replace Boat Ramp	104
		Replace Sump Pump	18
		Peter Faust Dam - Shelter Shed (Paint Interior and Exterior)	15
	2023-24	Study: 20yr Dam Safety Review (by 1 Dec 2023)	123
		Replace Control	117
		Study: 5yr Dam Comprehensive Inspection (by 1 Dec 2013)	86
		Replace Substation	57
		Peter Faust dam - Toilet Block (Paint Interior and Exterior)	15
	2024-25	Replace Switchboard-Valve House	141
		Electrical reticulation every 35 yrs.	49
	2025-26	Replace Cables & Cableways	1,039
	2026-27	Replacement balance for cable and cableways	245
		Replace Instrumentation	31
		Repaint Armco guardrail @ 15yrs.	25
		Peter Faust Dam - Patch Paint Trash Racks	19
		Peter Faust Dam - Shelter Shed (Paint Interior and Exterior)	15
		Refurbish/Overhaul Hydraulics unit	12
	2028-29	Study: 5yr Dam Comprehensive Inspection (by 1 Dec 2013)	86
		11PROXX - REFURBISH SWITCHBOARD	15
	2029-30	10PRO03-PFD CRANES 10YR INSPECTION	16
	2030-31	Replace Monorail Crane	68

Asset	*Year*	*Description*	*Value ($'000)*
		Peter Faust dam - Toilet Block (Paint Interior and Exterior)	15
		11PROXX - BLAST AND PAINT BAULKS	10
	2031-32	Replace Monorail Crane	103
		Peter Faust Dam - Shelter Shed (Paint Interior and Exterior)	15
	2032-33	Replace Control Equipment	86
		Peter Faust Dam - Patch Paint Trash Racks	19
	2033-34	Study: 5yr Dam Comprehensive Inspection (by 1 Dec 2013)	86
		Refurbish/Overhaul Hydraulics unit	12
	2034-35	Peter Faust Dam - Inlet Tower Bridge Recaulk Joints and Renew Asphalt	25
	2035-36	Peter Faust Dam - Spillway Bridge Recaulk Joints and Renew Asphalt	43
		Refurbish - Patch paint and seal	12
Peter Faust Wtp	2020-21	Replace Turbidimeter	25
Proserpine River Distribution	2016-17	Replace Meter Outlet No 280P	12
		Replace Meter Outlet No 285P	12
		Replace Meter Outlet No 287P	12
		Replace Meter Outlet No 290P	12
		Replace Meter Outlet No 297P	12
		Replace Meter Outlet No 300P	12
		Replace Meter Outlet No 301P	12
		Replace Meter Outlet No 302P	12
		Replace Meter Outlet No 303P	12
		Replace Meter Outlet No 304P	12
		Replace Meter Outlet No 305P	12
		Replace Meter Outlet No 306P	12
		Replace Meter Outlet No 308P	12
		Replace Meter Outlet No 309P	12
	2017-18	Replace Meter Outlet No 310P	12
		Replace Meter Outlet No 328P	12
		Replace Meter Outlet No 329P	12
		Replace Meter Outlet No 330P	12
		Replace Meter Outlet No 331P	12
		Replace Meter Outlet No 332P	12
		Replace Meter Outlet No 340P	12
		Replace Meter Outlet No 345P	12
		Replace Meter Outlet No 350P	12
		Replace Meter Outlet No 355P	12
		Replace Meter Outlet No 362P	12
		Replace Meter Outlet No 365P	12
		Replace Meter Outlet No 370P	12
		Replace Water Level Monitoring Equipment	11
		Replace Water Lvl Monitor Amtd 37K	11
		Replace Water Lvl Monitor Amtd 40K	11
	2018-19	Replace Meter Outlet No 60	12
		Replace Meter Outlet No 045P	12
		Replace Meter Outlet No 055P	12
		Replace Meter Outlet No 085P	12
		Replace Meter Outlet No 130P	12
		Replace Meter Outlet No 190P	12
		Replace Meter Outlet No 235P	12
		Replace Meter Outlet No 240P	12
		Replace Meter Outlet No 315P	12
		Replace Meter Outlet No 375P	12

Asset	*Year*	*Description*	*Value ($'000)*
		Replace Meter Outlet No 3809	12
		Replace Meter Outlet No 385P	12
		Replace Meter Outlet No 390P	12
		Replace Meter Outlet No 395	12
	2019-20	Replace Meter Outlet No 015P	12
		Replace Meter Outlet No 017P	12
		Replace Meter Outlet No 072P	12
		Replace Meter Outlet No 087P	12
		Replace Meter Outlet No 135P	12
		Replace Meter Outlet No 155P	12
		Replace Meter Outlet No 250P	12
		Replace Meter Outlet No 270P	12
		Replace Meter Outlet No 295P	12
		Replace Meter Outlet No 320P	12
		Replace Meter Outlet No 325P	12
		Replace Meter Outlet No 335P	12
		Replace Meter Outlet No 360P	12
	2020-21	Replace Meter Outlet No 382	19
		Replace Meter Outlet No 383	19
		Replace Meter, 300Mm Pa Abb	19
		Replace Meter Outlet No 02	12
		Replace Meter Outlet No 032P	12
		Replace Meter Outlet No 182P	12
		Replace Meter Outlet No 307P	12
		Replace Meter Outlet No 327	12
		Replace Meter Outlet No 372P	12
		Replace Meter, 200Mm D/S	12
	2021-22	Replace V Notch Weir	166
		Replace 122010A Peter Faust Dam Hw	36
		Replace Recorder	36