

2012 Review of Water Prices

Assessment of expenditure forecasts
for Southern Rural Water

3603/64.006



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Term	Definition
ANCOLD	Australian National Committee on Large Dams
BAU	Business As Usual
BMID	Bacchus Marsh Irrigation District
Capex	Capital Expenditure
CPI	Consumer Price Index
CRC	Current Replacement Cost
DHS	Department of Human Services
EPA	Environmental Protection Authority
ESC	Essential Services Commission
FTE	Full Time Equivalent
GIS	Geographical Information System
G-MW	Goulburn-Murray Water
GWM Water	Grampians Wimmera Mallee Water
IT	Information Technology
KPI	Key Performance Indicator
LMW	Lower Murray Water
MCA	Multi-Criteria Analysis
MID	Macalister Irrigation District
NPR	National Performance Report
NPV	Net Present Value
NWC	National Water Commission
O&M	Operations & Maintenance
OH&S	Occupational Health & Safety
OM&A	Operation, Maintenance and Administration
Opex	Operating Expenditure
RAV	Regulated Asset Value
SCADA	System Control and Data Acquisition
SRW	Southern Rural Water
WDV	Written Down Value
WID	Werribee Irrigation District
WIRO	Water Industry Regulatory Order 2003
WP	Water Plan

Executive summary

Cardno has been engaged by the essential Services Commission (ESC) to undertake an independent review of the expenditure forecasts provided by Southern Rural Water (SRW) as part of its Water Plan submission for the period 2013/14 to 2017/18.

Operating expenditure forecasts – determination of baseline operational expenditure

SRW has developed its forecast opex by adjusting its 2011/12 actual expenditure to formulate a baseline figure that is representative of business-as-usual. ES Table 1 below reconciles the 2011/12 actual opex to its 2011/12 baseline opex.

ES Table 1 Reconciliation of 2011-12 actual opex to baseline opex

Adjustment	Amount
Actual 2011-12 BAU opex	19,356
Wet year savings	134
Intensive Management Fee (IMF) costs not incurred	243
Strategy position filled, deferral of communication activity due to flood work and increase in software cost that has been delayed by 12 months	124
Isolated legal and flood cost expenditure	(188)
Other minor adjustments	(18)
2011-12 Baseline BAU opex	19,651
<i>Indexed to 2012/13 (1.58%)</i>	<i>19,962</i>

Operation expenditure forecast – escalators

CPI

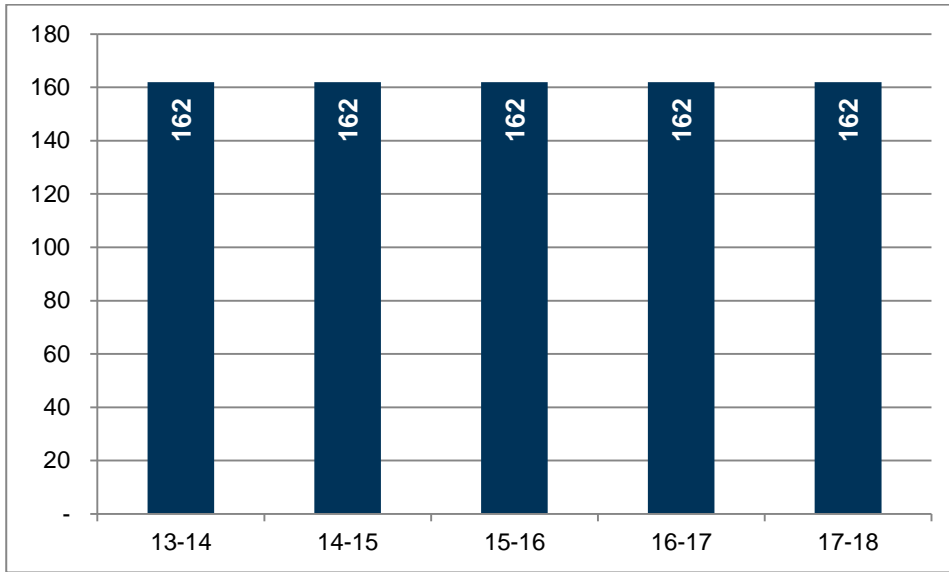
SRW has assumed the following escalation factors as listed in ES Table 2. These factors are consistent with the CPI factors recommended by the ESC.

ES Table 2 Assumed CPI

	13/14	14/15	15/16	16/17	17/18
CPI (per annum)	2.75%	2.75%	2.75%	2.75%	2.75%

Labour

SRW has forecast its number of FTEs to remain constant in WP3 as demonstrated in ES Figure 1

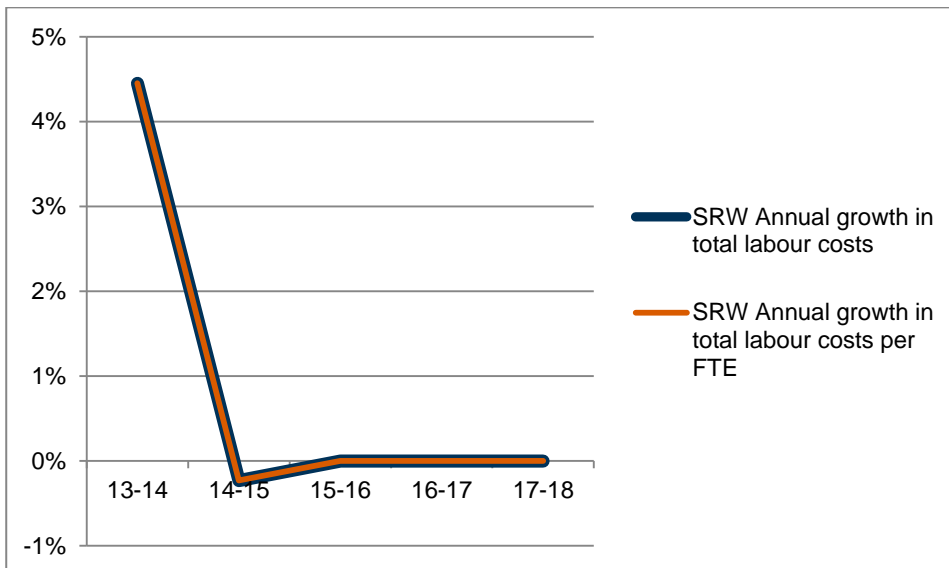


ES Figure 1 SRW forecast FTEs for WP3

The Southern Rural Water Enterprise Agreement was finalised in 2010 and was approved by the Commissioner to come into effect on 25 November 2010 with a nominal expiry date of 30 September 2014.

This agreement specifies that salary rates payable include a 4% increase on the previous base rate and that there will be a further 4% increase on 1 October 2011, 1 October 2012 and 1 October 2013 to cover a four year agreement.

SRW has adopted an initial increase to labour of 4.45% in 2013-14, and have assumed a 1% real increase in its labour components for the remaining periods of WP3. This increase is offset with productivity savings to forecast a relatively fixed labour cost from 2014-2018 as detailed in ES Figure 2 and ES Table 3.



ES Figure 2 Percentage annual growth in total labour costs and labour cost per FTE

ES Table 3 SRW Labour growth assumptions

	13/14	14/15	15/16	16/17	17/18
Actual and forecast labour costs for current FTEs (\$M)	13.56	13.52	13.52	13.52	13.52
Cost per FTE (\$M)	0.08	0.08	0.08	0.08	0.08
Annual growth in labour costs for current FTEs	4.45%	(0.27%)	0%	0%	0%

Electricity

Because most of SRW's water supply is gravity fed, its electricity costs are mostly for office use and is a minor cost in its business as usual estimates. SRW expects to manage electricity price increases within its general basket of external costs and has therefore assumed a zero real electricity increase in this price path.

Chemicals

SRW provides raw water to its customers and hence the cost of chemicals forms an insignificant percentage of its business as usual activities in the form of weed spraying. As a result, SRW has not escalated its chemical costs.

Productivity

In accordance with the ESC requirements, SRW is seeking to achieve a 1% per annum productivity gain until 2018 by actively generating efficiencies through improved work processes and targeted capital works. The implementation of the asset management system in 2013/14 will assist SRW to identify opportunities to achieve these efficiencies.

Operation expenditure forecast – WP3 submission

Our findings indicate that changes in operating expenditure forecast by SRW for WP3 are consistent with the timing of major capital projects and for fulfilling its obligations and customer service expectations as cost efficiently as possible. Any divergences from historical trends in operating expenditure have been explained by management and are detailed in Section 4 of this report.

The final recommendations for SRW's operating and capital expenditure for the third regulatory period are outlined in ES Table 4.

ES Table 4 Recommendations for SRW's operating expenditure forecast

	Current Price Path				Future Price Path			
	11/12	12/13	13/14	14/15	15/16	16/17	17/18	
Irrigation	10.56	10.51	10.44	10.37	10.3	10.23	10.16	
Drainage	-	-	-	-	-	-	-	
Domestic and stock	-	-	-	-	-	-	-	
Surface water diversions	2.64	2.67	2.64	2.62	2.60	2.58	2.57	
Groundwater diversions	2.63	2.66	2.66	2.65	2.63	2.61	2.59	
Bulk water services	2.82	2.90	2.88	2.86	2.84	2.82	2.80	
Licence Applications	1.32	1.20	1.21	1.20	1.19	1.18	1.17	
Total BAU	19.97	19.94	19.83	19.7	19.56	19.43	19.29	
New initiatives and obligations	-	-	0.60	0.44	0.39	0.39	0.38	
External bulk water charges (excl. temporary purchases)	0.47	0.47	0.48	0.48	0.48	0.48	0.48	
External temporary water purchases	-	-	-	-	-	-	-	
Licence fees	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Environment contribution	0.29	0.28	0.42	0.41	0.40	0.39	0.38	
Total prescribed opex	20.76	20.72	21.36	21.06	20.86	20.71	20.56	
Cardno recommended			21.36	21.06	20.86	20.71	20.56	
Net Change			-	-	-	-	-	

Capital expenditure forecasts

The final recommendations for SRW's capital expenditure forecasts for the third regulatory period are outlined in ES Table 5.

ES Table 5 Recommendations for SRW's capital expenditure forecast

	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18
Irrigation	6.82	3.60	4.55	6.73	10.74	10.40	10.06	9.15	8.40	7.88
Surface water diversions	0.64	0.60	0.49	0.26	0.54	0.55	0.50	0.55	0.45	0.51
Groundwater diversions	0.54	0.75	0.35	0.27	0.91	0.53	0.40	0.46	0.42	0.32
Bulk water	8.20	3.32	1.91	0.85	1.63	3.31	4.08	1.77	1.56	1.09
Licence applications	0.25	0.18	0.22	0.12	0.20	0.17	0.18	0.19	0.19	0.18
Total prescribed BAU capex	16.46	8.44	7.52	8.23	14.01	14.97	15.22	12.13	11.02	9.97
Cardno recommended						14.97	15.22	12.13	11.02	9.97
Net Change						-	-	-	-	-

Major projects comprising a significant proportion of the total capital expenditure forecast have been assessed as part of this review and have been deemed appropriate in relation to SRW's key drivers and

obligations. Robust justifications and reasonable cost estimates of works required have been provided by SRW for all projects reviewed as detailed in ES Table 6.

ES Table 6 Capital projects reviewed

Project	Driver	Estimated Cost
MID2030: Southern Cowwarr Balancing Storage	Improved Service	\$6.4M
MID2030: Eastern Regulator Retrofit	Improved service	\$2.7M
Werribee irrigation future program: Piping or lining of 4/1 channel	Renewal	\$4.0M
Replacement of conduit at Melton Reservoir	Renewal	\$2.0M
Heyfield regulator retrofit	Improved service	\$1.6M

Divergences from proposed capital expenditure for Water Plan 3 to SRW's historical capital expenditure trends have been investigated and are fully explained in Section 5 of this report.

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1 Introduction

1.1 Background

On 1 January 2004 the Essential Services Commission (ESC) became the economic regulator for the Victorian water sector. The Commission's role involves regulating the prices and service standards of 20 regulated water businesses supplying water, sewerage and related services to residential, industrial and commercial, and irrigation customers throughout the State.

Each of the regulated water businesses is required to develop and submit a Water Plan to the Commission for its approval. The Plans are required to set out:

- > What the water business proposes to achieve over the regulatory period in meeting demands for rural and where relevant urban water and sewerage services, and complying with its obligations.
- > How the water business proposes to achieve those outcomes.
- > The water business's revenue requirement to deliver those outcomes.
- > The proposed prices, or the manner in which prices will be calculated or otherwise determined, for each of the prescribed services.

The businesses are required to consult with other relevant regulators (including the ESC, the Environmental Protection Authority (EPA) and the Department of Human Services (DHS)) and the Minister with respect to those other parties' requirements and expectations prior to submitting their Water Plans to the Commission for the formal assessment against the principles set out in the Water Industry Regulatory Order 2003 (WIRO).

In late September 2012, the ESC received Water Plan 3 setting out, among other things, the proposed expenditure forecasts and prices for the five year period commencing 1 July 2013 from Southern Rural Water (SRW).

The ESC is required to assess the proposals set out in SRW's Water Plan 3, consistent with the requirements of the legislative framework. With respect to the businesses' expenditure forecasts, it must be satisfied that, among other things, the forecasts:

- > Reflect efficient expenditure.
- > Are consistent with delivering the required service levels, outputs and obligations over the regulatory period.
- > Take into account a planning horizon that extends beyond the regulatory period.

In assessing SRW's proposed Water Plan, the Commission is required to have regard to its objectives under the Essential Services Commission Act 2001 including the primary objective to "promote the long term interests of Victorian consumers" [section 8(1)]. Section 4C of the Water Industry Act 1994 also sets out a number of specific objectives that the Commission must have regard to in regulating the water sector namely:

- > Wherever possible, to ensure the costs of regulation do not exceed the benefits.
- > To ensure regulatory decision making and regulatory processes have regard to any differences in the operating environments of regulated entities.
- > To ensure regulatory decision making has regard to the health, safety, environmental sustainability (including water conservation) and social obligations of regulated entities.

Further more detailed requirements that the Commission needs to have regard to are set out in the WIRO, made under section 4D of the Water Industry Act. In particular, the Commission must be satisfied that the prices proposed by a water business comply with the regulatory principles outlined in the WIRO. Specifically, the WIRO requires prices to be set so as to, among other things:

- > Provide for a sustainable revenue stream to the regulated entity that nonetheless does not reflect monopoly rents or inefficient expenditure by the regulated entity.
- > Allow the regulated entity to recover operational, maintenance and administrative costs.
- > Allow the regulated entity to recover expenditure on renewing and rehabilitating existing assets.
- > Allow the regulated entity to recover a rate of return on investments made after 1 July 2004 to augment existing assets or construct new assets.
- > Take into account the interests of customers of the regulated entity, including low income and vulnerable customers, in receiving reliable services at affordable prices.
- > Provide the regulated entity with incentives to pursue efficiency improvements and to promote the sustainable use of Victoria's water resources and enable customers or potential customers of the regulated entity to readily understand the prices charged by the regulated entity for prescribed services, or the manner in which such prices are to be calculated or otherwise determined.

The regulatory principles also require the expenditure forecasts in the Water Plan to reflect the efficient delivery of the proposed outcomes contained in the Water Plan and take into account a planning horizon that extends beyond the regulatory period.

1.2 Scope

Cardno has been engaged by the ESC to undertake an independent review of the expenditure forecasts provided by SRW as part of its Water Plan submission for the five year period commencing 1 July 2013 and provide advice on whether the proposed expenditure forecasts are consistent with the requirements of the legislative framework.

The main objective of the review is to determine whether the operating expenditure (opex) and capital expenditure (capex) forecasts included in SRW's Water Plan:

- > Reflect efficient expenditure.
- > Are consistent with delivering the required service levels, outputs and obligations over the regulatory period.
- > Take into account a planning horizon that extends beyond the regulatory period.

In undertaking the review, Cardno is required to consider:

- > Any guidance issued by the ESC with respect to how it will assess the businesses' proposed expenditure forecasts including the 2013 Water Price Review – Guidance on Water Plans (2011).
- > The information set out in SRW's Water Plans (and accompanying information templates) and any explanations that the businesses provide with respect to the basis used to derive the forecasts including any assumptions used.
- > Any readily available data and information that Cardno has access to, to assess expenditure forecasts.
- > The experience of the Cardno's project team in preparing and assessing the veracity of forecasts as well as costing projects in the water sector.

Review of operating expenditure

The ESC requires advice on SRW's operating expenditure, specifically on whether:

- > Changes in operating costs are consistent with the timing of major capital projects.
- > The Commission expects that energy costs, labour costs, IT costs and chemical costs will be a significant focus of the operating expenditure review.
- > SRW is fulfilling its obligations and meeting customer service expectations as cost efficiently as possible, including through the setting of an appropriate target for cost efficiency gains.
- > Any forecast divergence from historical trends in operating expenditure can be readily explained, for example, by changes in obligations imposed by Government, including technical regulatory and customer service expectations.
- > One-off costs associated with the drought (for example costs relating to advertising, education and appliance changeover) have been removed.

Review of capital expenditure

The ESC requires advice on SRW's capital expenditure, specifically whether the projects reviewed meet the following criteria:

- > Appropriate in relation to key drivers and obligations – proposed capital expenditure reflects obligations imposed by Government (including technical regulators) or customers' service expectations.
- > Robust (with adequate supporting analysis and systems) – as demonstrated by reports which clearly enunciate the service outcomes proposed by the water business, and sets out the analysis undertaken of the options to deliver these outcomes and identifies the preferred approach. Evidence may also be sought to demonstrate that proposed capital expenditure is consistent with efficient long-term expenditure on infrastructure services (based on a best practice asset management framework which considers risk and system-wide needs).
- > Deliverable over the regulatory period – demonstrated that the key activities comprising the delivery of the project from planning to construction have been identified and thought through and that the projects can be practically delivered within the proposed timeframe, given the business's delivery of major projects in the past.
- > Reasonable cost estimate – the cost estimate is well supported either by a schedule of quantities using typical rates currently being experienced in the industry, or compare favourably with other similar projects or preferably both of the above.
- > Proposed trends in capital expenditure are compared with historical trends in expenditure; to identify the reasons for divergences from historical trends can be identified, together with any other relevant factors.
- > The business's risk sharing and incentive and penalty payment arrangements with its contractors are based on a symmetrical sharing of risk for delivery or non-delivery of projects.

1.3 Review methodology

Our approach to this review was based around structured interviews with key agency staff. Our review had the following stages:

- > Review of information, particularly SRW's Water Plan 3 for the period 2013 to 2018 and the expenditure information templates provided to us by the ESC.
- > Development and issue of a Review Plan, which sets out the program, interview themes and information requests.
- > Detailed interviews with SRW staff between 20 and 22 November 2012.
- > Preparation of a Draft Report that identifies our preliminary views on SRW's proposed expenditure forecasts and the nature of further work and investigation that will be undertaken.
- > Accept comments on the Draft Report (by 18 January 2013).
- > Issue of a Final Report that identifies our final view on SRW's proposed expenditure forecasts.

We found that SRW staff responded in a professional and cooperative manner to this review.

2 Profile of SRW

2.1 Overview of SRW

Southern Rural Water (SRW) was formed on 1 July, 1995 when the Rural Water Corporation was dissolved. SRW is a Victorian Government not-for-profit corporation with three primary business functions:

- > Irrigation Supply – supplying an average of 150,000ML for the Macalister Irrigation District near Maffra, 4,000ML to the Bacchus Marsh Irrigation District (BMID) and 10,000ML to the Werribee Irrigation District (WID) and associated rivers for irrigation and stock and domestic use.
- > Licensing access to water from groundwater and rivers – administering around 7,800 licences for surface and groundwater diversions, and licensing construction of bores and on-stream dams. SRW acts on behalf of the Minister to regulate licensing and use.
- > Managing large dams and weirs – with seven dams and eight weirs in the Werribee, Maribyrnong, Latrobe and Macalister basins to harvest, store and deliver bulk water entitlements for its own irrigation customers, urban water authorities and Latrobe Valley power generators.

SRW has approximately 160 staff based in offices across Victoria from Hamilton to Bairnsdale that serves a customer base of over 10,000. It has revenue of about \$28 million per year and assets with a current replacement cost of approximately \$1.4 billion.

2.2 Governance and organisational structure

The State Government appoints a Board of directors to oversee the direction of the business. The operation of SRW is the responsibility of the Manager Director, supported by the Chief Financial Officer, two General Managers and three Managers with the area of responsibilities being:

- > Water Supply East
- > Water Supply West
- > Groundwater and Rivers
- > Strategic and Technical
- > People and Performance
- > Finance.

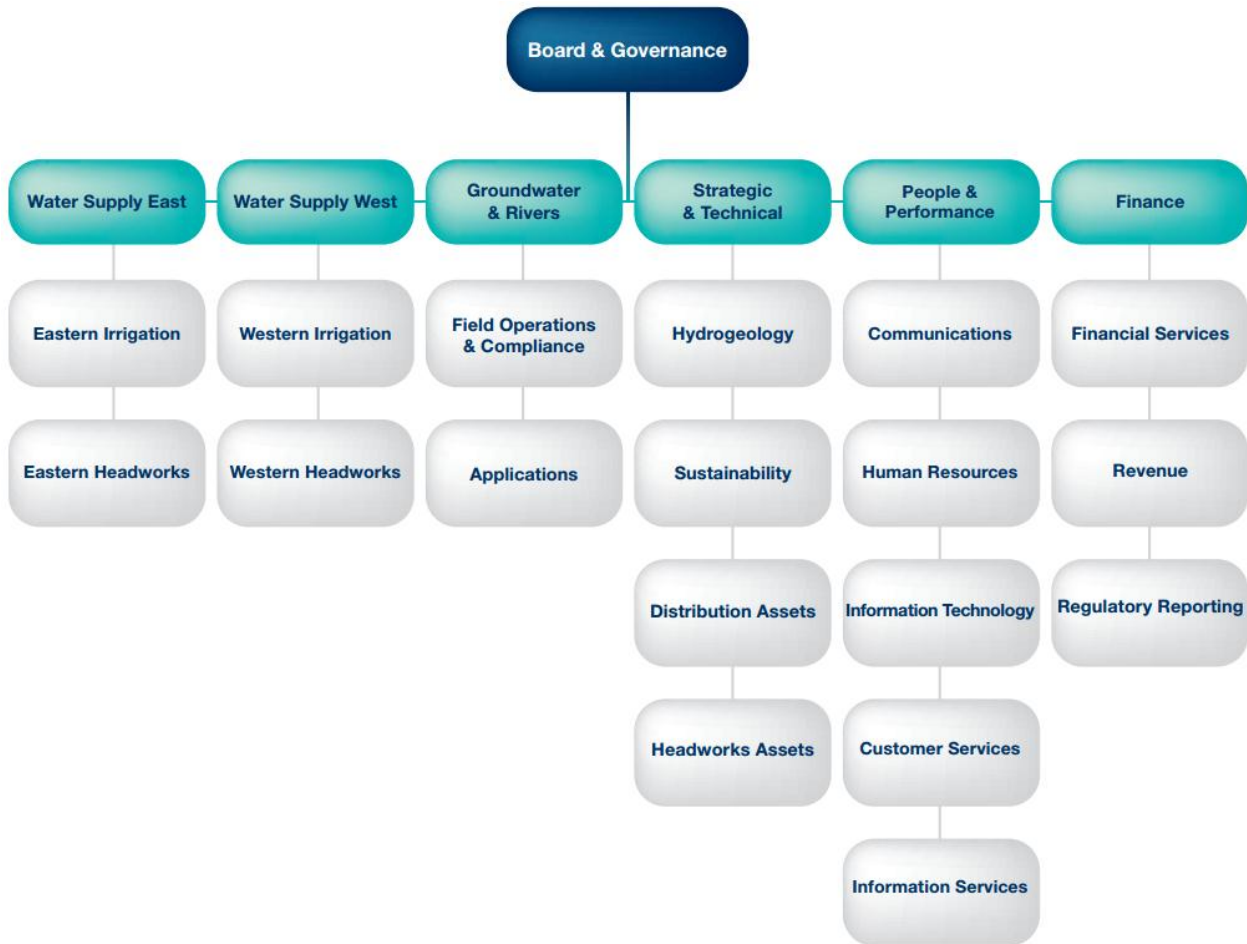


Figure 2-1 Organisations structure

Source: SRW Annual report 2012

2.3 Changes in service standards

SRW's current approved service standards are articulated in Water Plan 2, the ESC's Rural Water Customer Service Code and included in its Customer Charter. The ESC has advised that the service standards in Water Plan 3 should be:

- > Maintained at current levels, without deterioration.
- > Increased only with strong customer support.
- > Linked to increased performance where there are increases in expenditure.
- > Included in a revised Customer Charter.

SRW's Service Standards for Water Plan 3 are, based on achieving "business as usual" service outcomes with implementation of improvements, where possible, through efficiency and modernisation programs.

The service standards proposed by SRW:

- > Maintain existing service levels without deterioration
- > Have been developed with widespread customer consultation. SRW have worked with its customer forum and invited comment from its broader customer base through direct mailing. It has also run a focus group with licence holders in early 2012 and met with local councils and the Catchment Management Authority to discuss the Water Plan as part of regular engagement meetings.
- > Have been linked to increased performance from scheduled capital works

2.4 Asset base

SRW manages seven bulk water storages (including Lake Narracan), seven weirs (including Yallourn Weir) and over 740 km of gravity irrigation channels. The current replacement cost of its infrastructure assets is \$1,471M with a written down value of \$1,204M.

Figure 2-2 summarises the CRC of SRW's asset base.

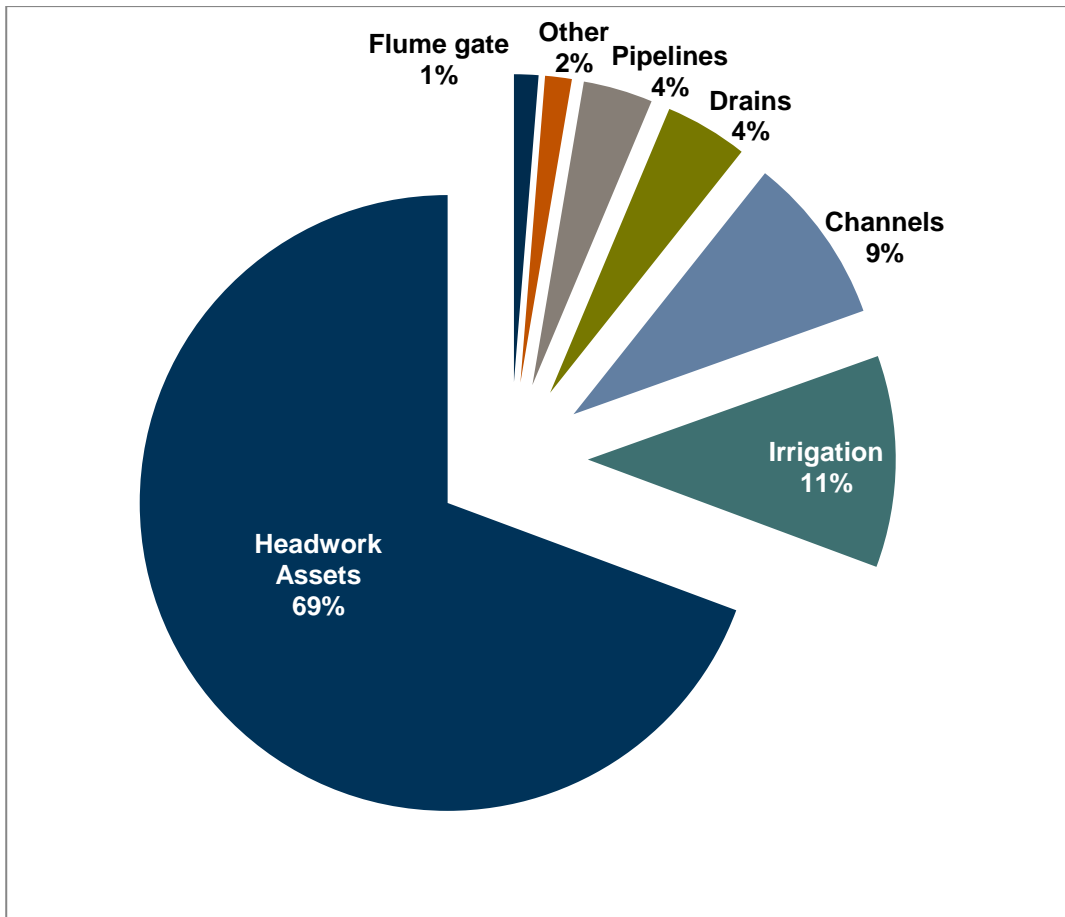


Figure 2-2 Asset value (%) by type of asset

The storage assets account for 69% of the asset base value with the distribution network accounting for the remaining 31%.

The combined current replacement cost of Blue Rock Reservoir (\$305.6M), Lederberg Weir and Diversion Tunnel (\$178.4M) and Lake Glenmaggie (\$153.3M) accounts for 43% of SRW’s asset base.

Much of the infrastructure is nearing the end of its useful life and is seen by SRW as being one of its major challenges.

2.5 Benchmarking

Gravity irrigation operation and maintenance

Table 2-1 summarises the gravity irrigation operation and maintenance data that was reported to the National Water Commission (NWC) for 2009/10 and has been utilised to benchmark SRW’s performance with other irrigation business in Australia. While this benchmarking is broad-brush it can be useful in identifying trends or matters that require further investigation.

The ranking for each indicator is included in Table 2-2 through to Table 2-8.

The analysis indicates that SRW has a strong focus on keeping its operating costs down and is competitive when its costs are benchmarked against the number of customers it serves. This analysis also suggests that either maintenance practices are efficient or that there is an under-investment in maintenance. Further improvement in SRW’s asset management systems will allow it to determine optimal maintenance and renewal expenditure in the future.

Table 2-1 Benchmarking gravity irrigation operation and maintenance

Business	Customers	Intake Volume	Volume Supplied	Assets	Operations	Maint	Admin	OM&A	OM&A per ML	OM&A per Customer	OM&A per km assets	Ops per ML	Maint per Customer	Maint per km of Assets	Network Delivery Efficiency
	(#)	(ML)	(ML)	(km)	(\$M)	(\$M)	(\$M)	(\$M)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(%)
G-MW	13,592	1,396	1,010	7,071	13.9	18	13	44.9	32,163	3,303	6,350	10	1,324	2,546	72.30%
Lower Murray	4,346	100	87	646	3.4	5.55	2.63	11.58	115,800	2,665	17,926	34	1,277	8,591	87%
Murrumbidgee	3,364	505	368	5,068	5	6	7.8	18.8	37,228	5,589	3,710	10	1,784	1,184	72.90%
SunWater	2,647	857	603	2,656	13.5	12	4	29.5	34,422	11,145	11,107	16	4,533	4,518	70.40%
Murray	2,404	385	161	2,946	8.4	2.9	7.6	18.9	49,091	7,862	6,415	22	1,206	984	41.80%
SRW	1,536	238	151	1,333	6.1	2.16	1.87	10.13	42,563	6,595	7,599	26	1,406	1,620	63.40%
Harvey	681	88	67	728	1.1	0.95	1.36	3.41	38,750	5,007	4,684	13	1,395	1,305	76.10%
Coleambally	493	157	115	1227	0.9	3.6	2.8	7.3	46,497	14,807	5,949	6	7,302	2,934	73.20%
Ord	111	151	114	293	1.3	0.82	0.68	2.8	18,543	25,225	9,556	9	7,387	2,799	75.50%

Table 2-2 Operations, maintenance and administration cost per ML

Business	OM&A per ML	Observation
1 Ord	18,543	SRW is ranked 6 th overall in this benchmark and ranks 2 nd (behind SunWater) in utilities with a customer base between 500 and 3,000. Despite the age and poor condition of its infrastructure, SRW is comparable to its peers in this benchmark.
2 G-MW	32,163	
3 SunWater	34,422	
4 Murrumbidgee	37,228	
5 Harvey	38,750	
6 SRW	42,563	
7 Coleambally	46,497	
8 Murray	49,091	
9 Lower Murray	115,800	

Table 2-3 Operations, maintenance and administration charge per customer

Business	OM&A per Customer	Observation
1 Lower Murray	2,665	SRW is ranked 5 th overall in this benchmark and ranks 2 nd (behind Harvey) in utilities with a customer base between 500 and 3,000. SRW performs well amongst its peers in this benchmark.
2 G-MW	3,303	
3 Harvey	5,007	
4 Murrumbidgee	5,589	
5 SRW	6,595	
6 Murray	7,862	
7 SunWater	11,145	
8 Coleambally	14,807	
9 Ord	25,225	

Table 2-4 Operations, maintenance and administration charge per km of assets

Business	OM&A per km assets	Observation
1 Murrumbidgee	3,710	SRW is ranked 6 th overall in this benchmark. It ranks 4 th (behind Harvey, Coleambally and Murray) in utilities with a customer base between 500 and 3,000.
2 Harvey	4,684	
3 Coleambally	5,949	This benchmark suggests that SRW could be underperforming in the cost of running its assets per kilometre. This could be attributed to its aging infrastructure, delivery inefficiencies (water loss) or diseconomies of scale as it has the 3 rd lowest ratio of channel km per customer.
4 G-MW	6,350	
5 Murray	6,415	
6 SRW	7,599	
7 Ord	9,556	
8 SunWater	11,107	
9 Lower Murray	17,926	

Table 2-5 Operational costs per ML

Business	Ops per ML	Observation
1 Coleambally	6	SRW is ranked 8 th overall in this benchmark. It ranks last in utilities with a customer base between 500 and 3,000.
2 Ord	9	
3 G-MW	10	This performance measure is based on intake volume and increases to \$40 per ML when based on volume supplied, highlighting the inefficient nature of SRW's irrigation network.
4 Murrumbidgee	10	
5 Harvey	13	
6 SunWater	16	
7 Murray	22	
8 SRW	26	
9 Lower Murray	34	

Table 2-6 Maintenance costs per customer

Business	Maint per Customer	Observation
1 Murray	1,206	SRW is ranked 5 th overall in this benchmark and ranks 3 rd (behind Murray and Harvey) in utilities with a customer base between 500 and 3,000.
2 Lower Murray	1,277	
3 G-MW	1,324	SRW performs well in this measure considering the age of its network. This indicator may suggest efficiency in maintenance practice or under-investment in maintenance
4 Harvey	1,395	
5 SRW	1,406	
6 Murrumbidgee	1,784	
7 SunWater	4,533	
8 Coleambally	7,302	
9 Ord	7,387	

Table 2-7 Maintenance cost per km of assets

Business	Maint per km of Assets	Observation
1 Murray	984	SRW is ranked 4 th overall in this benchmark. It ranks 3 rd (behind Murray and Harvey) in utilities with a customer base between 500 and 3,000. This indicator may suggest efficiency in maintenance practice or under-investment in maintenance
2 Murrumbidgee	1,184	
3 Harvey	1,305	
4 SRW	1,620	
5 G-MW	2,546	
6 Ord	2,799	
7 Coleambally	2,934	
8 SunWater	4,518	
9 Lower Murray	8,591	

Table 2-8 Network delivery efficiency

	Business	Network Delivery Efficiency	Observation
1	Lower Murray	87%	SRW is ranked 8 th overall in this benchmark. It ranks 4 rd (behind Harvey, Coleambally, SunWater) in utilities with a customer base between 500 and 3,000.
2	Harvey	76.10%	
3	Ord	75.50%	This measure highlights SRW's network delivery inefficiency as being well below average and is consistent with the observations in Section 2.6.
4	Coleambally	73.20%	
5	Murrumbidgee	72.90%	
6	G-MW	72.30%	
7	SunWater	70.40%	
8	SRW	63.40%	
9	Murray	41.80%	

Gravity irrigation maintenance and capital expenditure

Table 2-9 summarises the gravity irrigation maintenance and capital expenditure data that was reported to the National Water Commission (NWC) for 2009/10. As the bulk of assets transferred to SRW at inception had zero value, benchmarking in these measures could not be performed.

Benchmarking headworks management

Table 2-10 includes comparative information on regulated river supply service. The SRW regulated river supply service has very low OM&A costs per storage, however, because of relatively low volumes its cost per volume supplied is more than double that of StateWater and SunWater, but still significantly lower than G-MW. SRW has the highest cost of maintenance per storage weir. Without further detailed analysis it is difficult to determine the reasons for these differences. SRW may find it beneficial to investigate this further.

Table 2-9 Benchmarking gravity irrigation maintenance and capital expenditure 2009/10

Business	Current Replacement Cost (CRC)	Written Down Value (WDV)	WDV/CRC	Maint	Maint as % Current Replacement cost	Capital Expenditure	Capital Expenditure/CRC
	(\$M)	(\$M)	(%)	(\$M)	%	(\$M)	(%)
G-MW	2,747.4	1435	52%	18.0	0.66%	7.3	0.27%
Lower Murray	102.9	47.5	46%	5.6	5.39%	3.6	3.50%
Southern Rural Water				2.2		3.7	
Coleambally	98.6	33.2	34%	3.6	3.65%		
Murray	356.5			2.9	0.81%	5.7	1.60%
Murrumbidgee	481.0	411	85%	6.0	1.25%	13.2	2.74%
SunWater	1,873.0	1146	61%	12.0	0.64%	6.9	0.37%
Ord	87.7	18	21%	0.8	0.94%	-	0.00%
Harvey	121.8	110.7	91%	1.0	0.78%	5.6	4.60%

Table 2-10 Benchmarking headworks management

	Customer base	Long Term Supply Expectation	Volume Supplied in Year	Regulated River	Storage	Weir	Opex	Maint	Admin	OM&A per Storage	OM&A per Volume Supplied	Maint per Storage & Weir	OM&A per long term supply expectation volume
	(#)	(GL)	GL	(km)	(#)	(#)	(\$M)	(\$M)	(\$M)	(\$M)	\$/ML	(\$k)	\$/ML
G-MW	30	273	83	2,470	13	14	26	2.75	3.22	2.46	385	69	117
SRW	108	24	93	580	7	8	2.90	1.10	1	0.71	54	101	208
State Water	5,719	4,587	1,682	7,920	18	306	17.60	15.60	2.60	1.99	21	48	8
Sun Water	1,778	1,234	1,108	3,254	17	60	10.12	4.99	3.26	1.08	17	71	15

2.6 Issues and challenges

SRW operates a relatively old distribution network with high water losses and has customers that are particularly sensitive to the cost increases associated with the storage and delivery of water. To manage this challenge, SRW has adopted a capital delivery model that clearly identifies the need for works and engages its customers to obtain consensus on where significant costs are to be spent.

Its MID2030 strategic program in the Macalister Irrigation District aims to make this network more efficient in a sustainable and cost effective manner for its customers through pipelining and channel automation with the objective to provide improved service and real water savings to its customers and assist in developing the region's economic growth and resilience to climate change.

The bulk of the assets in the Werribee and Bacchus Marsh are inefficient, old and approaching the end of design life. A recent drought in this region highlighted that a strategic focus on the water supply was required and resulted in a recycled water scheme being set up in the Werribee Irrigation District (WID). SRW has identified some channel lining and installation of accurate measurement technology to improve the delivery efficiency in the WID in WP3 and is undertaking a feasibility study into the reconfiguration and modernisation of the Bacchus Marsh Irrigation District (BMID) network.

Dealing with new technologies from the modernisation programs also has implications for the business. New skill sets are required from staff and different operational and maintenance work processes need to be implemented to obtain full benefit from the upgrades to the irrigation network.

Headworks staff are facing increased operational challenges in setting up work processes to align with ANCOLD safety inspections. SRW intends to manage this challenge by improving efficiencies in its operations through targeted capital works.

Operations outside of SRW's normal environmental conditions create a unique set of challenges depending on whether it is a wet or dry season. SRW has identified that it may benefit from a contingency fund to absorb costs associated with these seasonal variations without amending the indicative WP3 price path. At the time of the review there was no formal documentation to define the costs that this fund can be utilised for and other governance arrangements in maintaining these funds to ensure that these funds are being utilised as intended.

An audit of SRW's asset management function was recently completed and identified a number of recommendations. SRW's progress in addressing these recommendations is discussed in Section 3.

2.7 Key outcomes identified in Water Plan 3

SRW's vision is to provide "outstanding rural water management for a prosperous southern Victoria".

During WP3 it proposes the following initiatives and works that are relevant to this review and are discussed further in the report:

- > Safe dams: SRW is planning to reduce dam safety risk to within the "Limit of Tolerability", consistent with DSE's Guidance Note (2011).
- > MID2030 leading works: SRW has identified leading works to improve the efficiencies of the MID irrigation network.
- > Werribee Irrigation District works: SRW is to commence modernisation of the district, starting with piping or lining the 4/1 channel.
- > Bacchus Marsh Irrigation District: a cost and feasibility study on the reconfiguration of the district was recently completed and will form the basis of discussions with customers and stakeholders regarding future capital works in the area. Due to the significant costs associated with these works, SRW will continue engaging with its customers and stakeholders to determine its long-term strategy for the region. In the meantime, SRW's short-term focus will be on ensuring continuity of supply from an aging asset base.
- > Asset management system: SRW has budgeted to implement an asset management system in 2012/13 that extends the business's capability in workforce scheduling, work order generation and maintenance

history recording. Two extra staff members have been budgeted for 2013/14 for managing the new system. This initiative is expected to identify and deliver efficiencies in Water Plan 3.

- > Meter compliance plan: SRW intends to achieve full compliance of its unregulated surface water and groundwater systems by 2020. Due to the costs associated with compliance of this plan, existing meters will only be replaced at the end of their useful life unless there is external funding provided or meters are replaced within an automation project. An outlet rationalisation program in the MID will assist in reducing the future capital costs associated with these works.

3 Asset management and project delivery

As part of our review, we took into consideration SRW’s asset management practices in relation to their potential impact on its operating and capital expenditure projections. Key relevant information and observations are noted in the following sub-sections.

3.1 Asset management information systems

The systems utilised by SRW to manage its asset information, and the status of these systems is summarised in Table 3-1. These systems are not integrated, but the GIS, Asset Life and Finance One are linked.

Table 3-1 Status of asset management information systems

System - Category	Code	System Name						Links with	Level of development	Planned upgrade
			EIB - Irrigation	EIB- Dams	WIB - Irrigation	WIB - Dams	G&R			
Customer management	CM	IPMG2	■		■				Advanced	No
Asset register	AR	AssetLife	■	■	■	■	■	CR, GIS	Intermediate	Full replacement
GIS	GIS	Esri	■	■	■	■	■	AR		
Maintenance management	MM	Varies	■	■	■	■		None	Minimum	Module of new AR
Asset Performance	AP	No System							Minimum	Part of new AM
Cost reporting	CP	Finance One	■	■	■	■	■	None	Intermediate	Part of new AM
SCADA	SC	Mixed	■	■	■	■			Minimum	Site specific
Mobile computing	MC	Mobiles, tablets and phones	■				■		Minimum	Under review
■		Fully developed								
■		Partially developed								

Implementation of the new asset management system in 2013/14 will improve the information available to SRW and allow it to optimise its asset management processes.

The outputs from the upgrade to the asset management system include:

- > A consolidated Asset Register
- > Maintenance workflow management
- > User defined reporting
- > Asset strategic performance tool
- > GIS Integration.

- > Flexible User Interface
- > Mobile device compatibility.

3.2 Progress in addressing recommendations of asset management audit

The asset management audit undertaken in late 2011 identified the following improvement opportunities:

Recommendation	SRW Progress
1. An Asset Management Plan is required for the Werribee and Bacchus Marsh Irrigation Districts.	SRW anticipates having an Asset Management Plan completed for the WID and BMID in the 2012/13 financial year.
2. Completion of the project to implement a comprehensive Asset Management System.	SRW is progressing with the implementation of its new asset management system.
3. Review the current Dam Safety Management Manual against the recommended Asset Management Plan guidelines, as presented within the International Infrastructure Management Manual (IIMM).	In progress
4. Implementation of the Asset Management System should include consideration of access to timely and accurate information from headworks to allow for input of information, and access to reports for maintenance and operational purposes.	This recommendation is being addressed as part of the new asset management system implementation.
5. Timely access to accurate maintenance information required for water distribution assets. Maintenance budgets should be set based on a "bottom up" approach, i.e., such that maintenance budgets are calculated from the summation of anticipated spend against specific assets, based on their condition, criticality, expected level of service and risk of failure.	This recommendation is being addressed as part of the new asset management system implementation.
6. Complete the Western Irrigation Asset Management plan to cover the operation, maintenance and management of assets within the Werribee and Bacchus Marsh regions.	SRW anticipates having an Asset Management Plan completed for the WID and BMID in the 2012/13 financial year.
7. Reassess current staffing levels against required workload, specifically for the operation and maintenance of headworks.	SRW intends to manage this challenge by improving efficiencies in its operations through targeted capital works.
8. Confirm that tracking and reporting of maintenance activities has been considered as part of the current project to implement an Asset Management System.	This recommendation is being addressed as part of the new asset management system implementation.
9. Once an agreed pattern approved meter has been identified, a plan to upgrade current metering systems will need to be developed – it is understood that this metering upgrade plan will be included in the next SRW Water Plan.	SRW intends to achieve full compliance of its meters in the unregulated surface water and groundwater systems by 2020. Due to the costs, existing meters will be grandfathered unless there is external funding provided or meters are replaced within an automation project.
10. The Asset Life Asset Register does not currently allow for adequate information about meters to be recorded, and is an out of date product. Include required information within the Asset Management System currently being implemented.	This recommendation is being addressed as part of the new asset management system implementation.
11. Manage future maintenance of meters via the Asset Management System currently being implemented.	This recommendation is being addressed as part of the new asset management system implementation.
12. Meter maintenance needs to be improved from a reactive basis to a clearly defined proactive maintenance regime.	This recommendation is being addressed as part of the new asset management system implementation.

3.3 Capital delivery processes

SRW has developed and implemented a formalised capital delivery process which is documented in the Capital Procedure Manual. This process aligns with the Victorian Department of Treasury and Finance's Gateway Model with staged approvals. The Manual includes the following Gate templates to initiate a capital project:

Gate 1:	Problem Statement
Gate 2:	Business Case
Gate 3:	Ready to procure
Gate 4:	Other Assessment
Gate 5 & 6:	Project Review and Close

The approach this process varies according to the value of the project:

>\$500k	Full process is to be followed
\$100 – \$500k	Gate 1 and 2 is combined into one document and approved jointly
<\$100k	Follow a simpler process

In our review of a sample of capital projects (refer Section 5) we found that generally these processes were being followed.

A central part of SRW's capital expenditure development and prioritisation process is assessment of risk. ANCOLD guidelines provide the overall framework for risk management of SRW's dams and its dam risk portfolio is updated annually.

As risks are identified that relate to SRW's physical assets, risk mitigation measures are recorded as potential projects, a problem statement developed and potential consequences identified.

SRW has a formalised project prioritisation in place whereby the priority for identified capital projects is assessed by scoring each project on a number of weighted criteria.

The capital expenditure prioritisation process assesses both risk and benefits. The risk component assesses the level of change to risk associated with the implementation of the project. For example, a dam safety project may take the probability of failure from a 1 in 1000 year event, to a 1 in > 100,000 year event. This material change in the level of risk is then scored and all projects are ranked for benefit and risk reduction.

Customer Involvement

SRW interacts with its customers extensively regarding strategic projects (such as the MID2030 program) and holds monthly customer committee meetings to address business as usual items.

Procurement

SRW follows the following procurement strategies for capital works:

- Design: a consultancy panel is utilised and selected by open tender.
- Construction: at least 2 quotes are obtained for works within \$15,400 - \$100,000
1 quote is obtained for works below \$15,400
Works estimated to be greater than \$100,000 are selected by open tender.

Process resources

SRW utilises internal resources for the identification and justification of capital initiatives.

Design and construction works are generally outsourced, but the program planning and project management function of these works is retained in-house.

Most large projects are delivered by the Strategic and Technical group with smaller projects being delivered by the relevant business group.

3.4 Cost estimating processes

Techniques used by SRW to estimate the cost of its projects varies depending on the nature and complexity of the work required.

Routine works are based on standard costs collected from previous projects and applied to the scope of works required. Where necessary, SRW allocates a contingency on an item by item basis to take into account where the greatest variations may occur rather than adopting a blanket percentage.

For more complex works, preliminary estimates are calculated for initial options identified in the Problem Statement. Upon approval of the Problem Statement, initial options identified are reconsidered and thoroughly investigated to identify a preferred solution. Often external consultants will be engaged to review the options proposed and to provide more detailed estimates of the potential solutions. SRW will review the work of these investigations to identify a preferred solution. A detailed design is then commissioned for the solution so that the best estimate of the cost of the required works can be determined and included in the Business Case.

We conclude that SRW's approach to cost estimation is appropriate.

4 Operating expenditure

4.1 Methodology

The review of SRW's historic and forecast operating expenditure (opex) was based on interviews with key SRW staff, analysis of data provided and consideration of the following documents:

- > Water Plan 3 Submission
- > Water Plan 3 Financial Template
- > Information provided by SRW staff in response to interview questions and requests for clarification or supporting material.

4.2 Operating expenditure in current price path

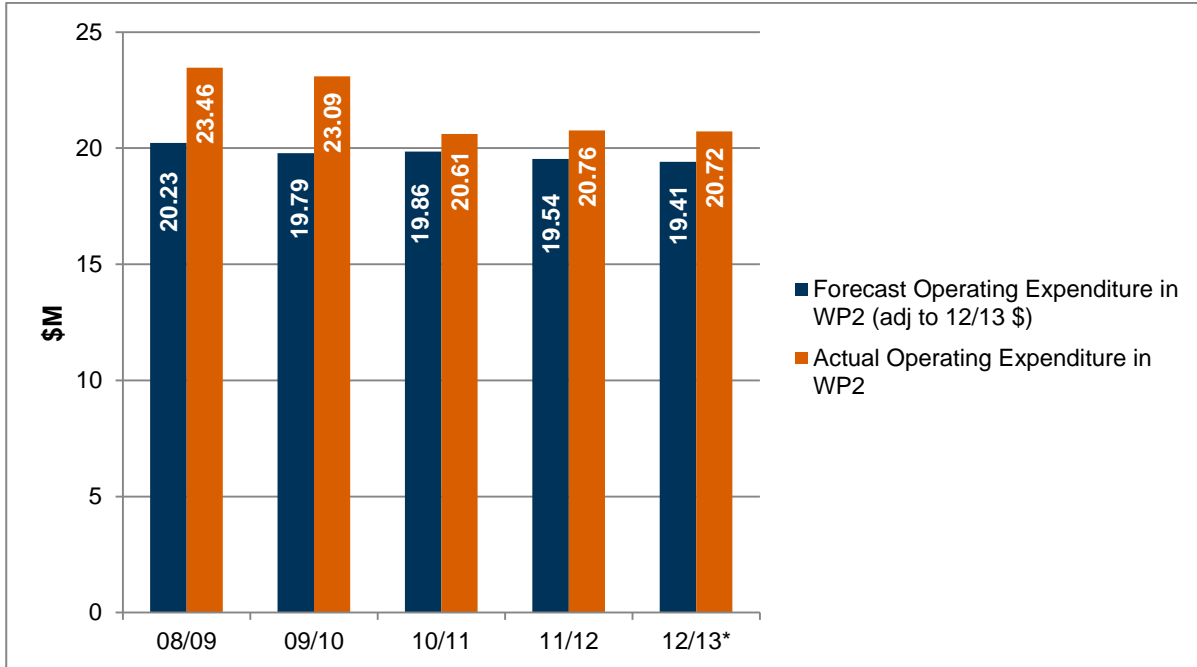
Operating expenditure in the current price path is summarised in Table 4-1. The expenditure shows a consistent reduction in costs year on year from 2008/09 to 2010/11. It then increases marginally by 0.7% in 2011/12 and the forecast 2012/13 expenditure is anticipated to decrease by 2%.

Table 4-1 Operating expenditure in current price path (\$12/13)

	08/09	09/10	10/11	11/12	12/13
Irrigation	8.88	8.61	8.31	10.56	10.51
Drainage	-	-	-	-	-
Domestic and stock	-	-	-	-	-
Surface water diversions	2.25	2.28	2.48	2.64	2.67
Groundwater diversions	2.31	2.33	2.41	2.63	2.66
Bulk water services	4.90	4.91	5.18	2.82	2.90
Licence applications	2.68	2.57	1.71	1.32	1.20
Total Business as Usual	21.02	20.70	20.09	19.96	19.94
<i>New initiatives and obligations</i>					
External bulk water charges (excl. temporary purchases)	2.11	2.03	0.25	0.47	0.47
External temporary water purchases	-	-	-	-	-
Licence fees	0.03	0.03	0.02	0.03	0.03
Environment Contribution	0.30	0.33	0.25	0.29	0.28
Total prescribed opex	23.46	23.09	20.61	20.76	20.72
Fully Government funded programs/projects	-	-	-	-	-
Fully customer funded programs/projects	-	-	-	-	-

4.3 Forecast vs. actual operating expenditure in current price path

Figure 4-1 compares planned and actual operating expenditure in the current price path. The total actual expenditure over the price path is estimated to be \$108.63M compared to a planned expenditure of \$98.83M a variance of 9.93%.



* Forecast

Figure 4-1 Operating expenditure in current price path (\$12/13) planned vs. actual

Due to drought conditions in 2008/09 and 2009/10, SRW incurred additional expenditure not included in its original forecasts in the form of increased groundwater application costs and recycled water/emergency water supply. Additional costs for these items totalled \$4.4M in 2008/09 and \$3.5M in 2009/10. These additional costs account for a large proportion of the observed variance between the forecast and actual expenditure in these periods.

The average variance of actual vs. forecast expenditure for WP2 when adjusted for the impact of the drought is 3% which we believe is reasonable tolerable given the challenging operating environment faced by SRW in WP2.

4.4 Determination of baseline operational expenditure

SRW has developed its forecast opex by adjusting its 2011/12 actual expenditure to formulate a baseline figure that is representative of business-as-usual. Table 4-2 below reconciles the 2011/12 actual opex to its 2011/12 baseline opex.

Table 4-2 Reconciliation of 2011-12 actual opex to baseline opex

Adjustment	Amount
Actual 2011-12 BAU opex	19,356
Wet year savings	134
Intensive Management Fee (IMF) costs not incurred	243
Strategy position filled, deferral of communication activity due to flood work and increase in software cost that has been delayed by 12 months	124
Isolated legal and flood cost expenditure	(188)
Other minor adjustments	(18)
2011-12 Baseline BAU opex	19,651
Indexed to 2012/13 (1.58%)	19,962

4.5 Operating expenditure in the future price path

Determination of future operational expenditure

The operating expenditure in the future price path is summarised in Table 4-3. For the next price path the expenditure is relatively stable and reflects historic business-as-usual costs for all sectors of SRW.

New initiatives and obligations are modest over the price path, although SRW has forecast a 50% increase in its Environment Contribution payments.

These two items combined result in a 3% increase of 2013/14 prescribed opex cost compared to the 2012/13 forecast numbers, however prescribed opex drops to current price path numbers in 2016/17, and continue to decline in 2017/18.

Table 4-3 Operating expenditure in future price path

	Current Price Path			Future Price Path			
	11/12	12/13	13/14	14/15	15/16	16/17	17/18
Irrigation	10.56	10.51	10.44	10.37	10.3	10.23	10.16
Drainage	-	-	-	-	-	-	-
Domestic and stock	-	-	-	-	-	-	-
Surface water diversions	2.64	2.67	2.64	2.62	2.60	2.58	2.57
Groundwater diversions	2.63	2.66	2.66	2.65	2.63	2.61	2.59
Bulk water services	2.82	2.90	2.88	2.86	2.84	2.82	2.80
Licence Applications	1.32	1.20	1.21	1.20	1.19	1.18	1.17
Total BAU	19.97	19.94	19.83	19.7	19.56	19.43	19.29
New initiatives and obligations	-	-	0.60	0.44	0.39	0.39	0.38
External bulk water charges (excl. temporary purchases)	0.47	0.47	0.48	0.48	0.48	0.48	0.48
External temporary water purchases	-	-	-	-	-	-	-
Licence fees	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Environment Contribution	0.29	0.28	0.42	0.41	0.40	0.39	0.38
Total prescribed opex	20.76	20.72	21.36	21.06	20.86	20.71	20.56
Fully Government funded programs/projects	-	-	-	-	-	-	-
Fully customer funded programs/projects	-	-	-	-	-	-	-

Benchmarking of operating expenditure price paths

In Section 2.5 we compared SRW’s performance against other rural water providers. This analysis concluded that SRW has a strong focus on keeping its opex costs down and is competitive when its costs are benchmarked against the number of customers it serves. However, this may also indicate underspending on maintenance. Implementation of the new asset management system will provide SRW with the information to identify opportunities for optimising maintenance and renewals.

In this section we trend the total business as usual operational and prescribed expenditure of SRW, Grampians Wimmera Mallee Water (GWM Water), Lower Murray Water (LMW) and Goulburn-Murray Water (G-MW) based on the information submitted in the Water Plan 3 financial template. All providers start with a base of 100 in a specific year (2005/06) and are adjusted for the % increase or decrease in expenditure.

Figure 4-2 shows very erratic movements in the % increases and decreases in the business as usual operational expenditure of the four entities. This can be attributed to severe drought and subsequent flood conditions in the mid to late 2000s. Projected expenditure is more stable from 2012/13 onwards.

This graph shows that SRW is projecting a gradual decrease in opex over WP3. SRW’s expenditure has increased quite significantly in relation to 2005/06 expenditure.

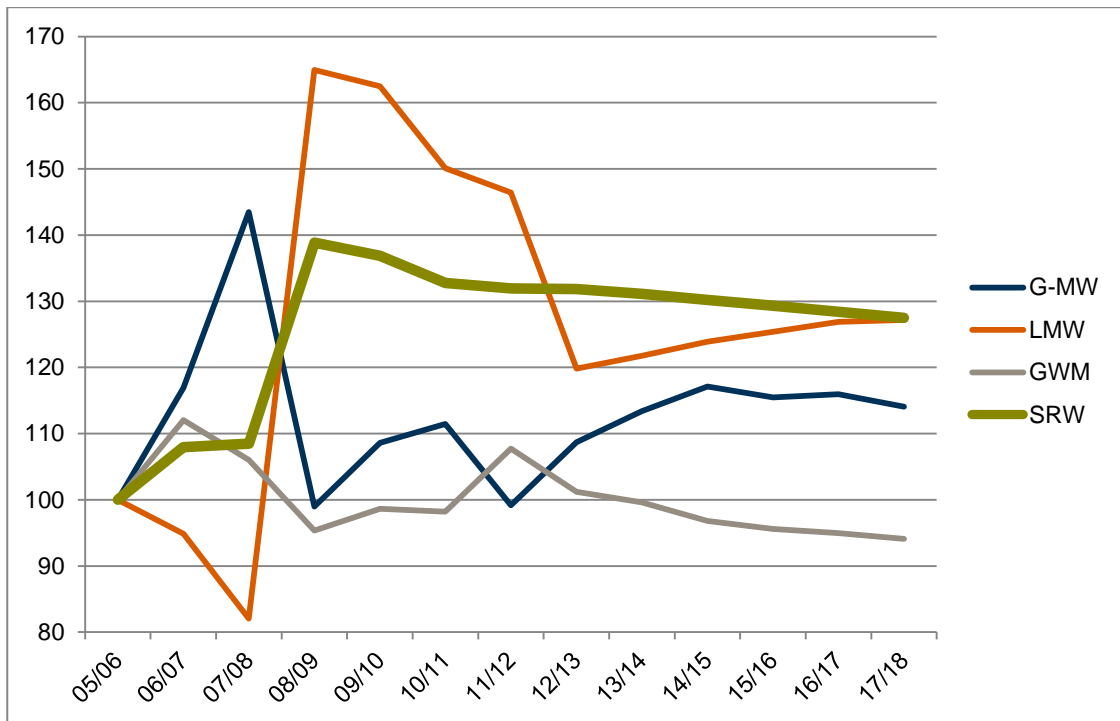


Figure 4-2 Total Business As Usual Opex (from a common base of 100)

As with Figure 4-2 above, Figure 4-3 shows that following quite erratic movements in the percentage increases and decreases in the prescribed operational expenditure due to the “non – business as usual conditions” experienced by the businesses from 2005/06 to 2010/11. SRW’s expenditure is quite stable from 2011/12 onwards.

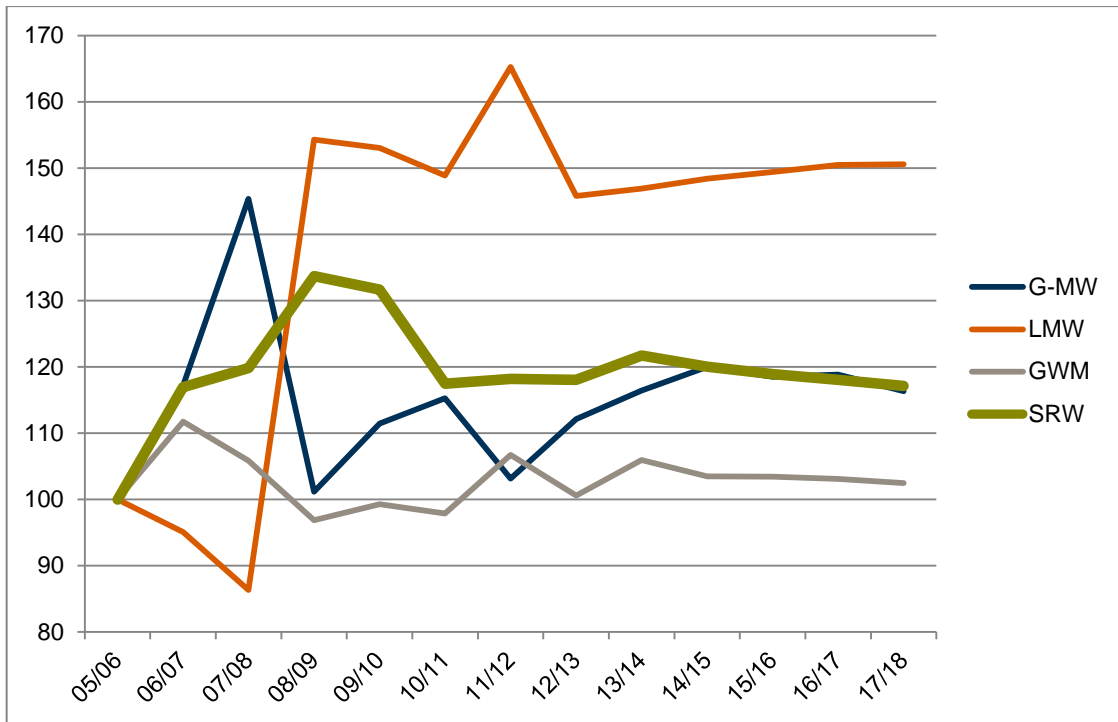


Figure 4-3 Total Prescribed Opex (from a common base of 100)

4.6 Operating expenditure escalators

CPI

SRW has assumed the escalation factors listed in Table 4-4 for general inflation. These assumptions are consistent with the CPI factors recommended by the ESC.

Table 4-4 Assumed CPI

	13/14	14/15	15/16	16/17	17/18
CPI (per annum)	2.75%	2.75%	2.75%	2.75%	2.75%

Labour

SRW has forecast its number of FTEs to remain constant in WP3 as demonstrated in Figure 4-4.

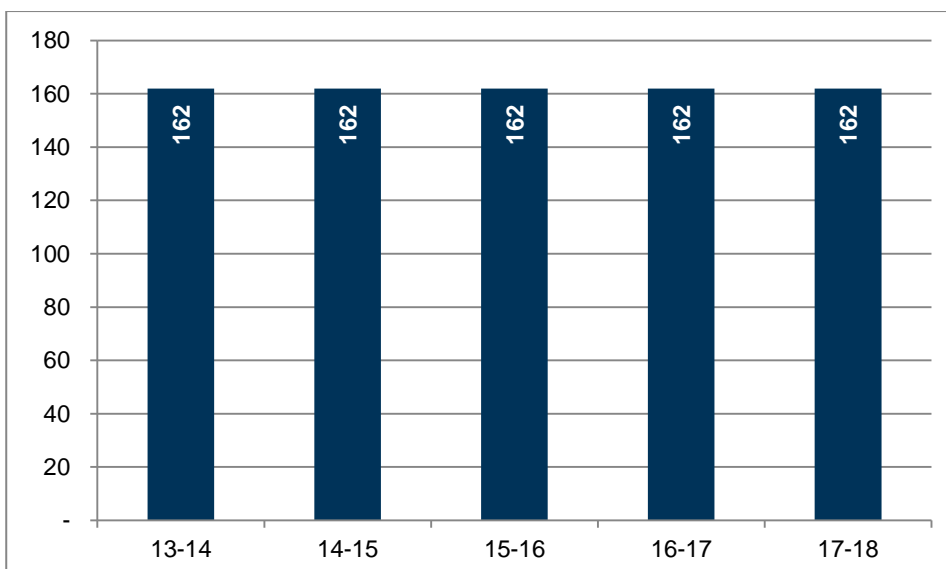


Figure 4-4 SRW forecast FTEs for WP3

The Southern Rural Water Enterprise Agreement was finalised 2010 and was approved by the Commissioner to come into effect on 25 November 2010 with a nominal expiry date of 30 September 2014.

This agreement specifies that salary rates payable include a 4% increase on the previous base rate and that there will be a further 4% increase on 1 October 2011, 1 October 2012 and 1 October 2013 to cover a four year agreement.

SRW has adopted an initial increase to labour of 4.45% in 2013-14, and has assumed a 1% real increase in its labour components for the remaining periods of WP3. This increase is offset with productivity savings to forecast a relatively fixed labour cost from 2014-2018 as detailed in Figure 4-5 and Table 4-5.

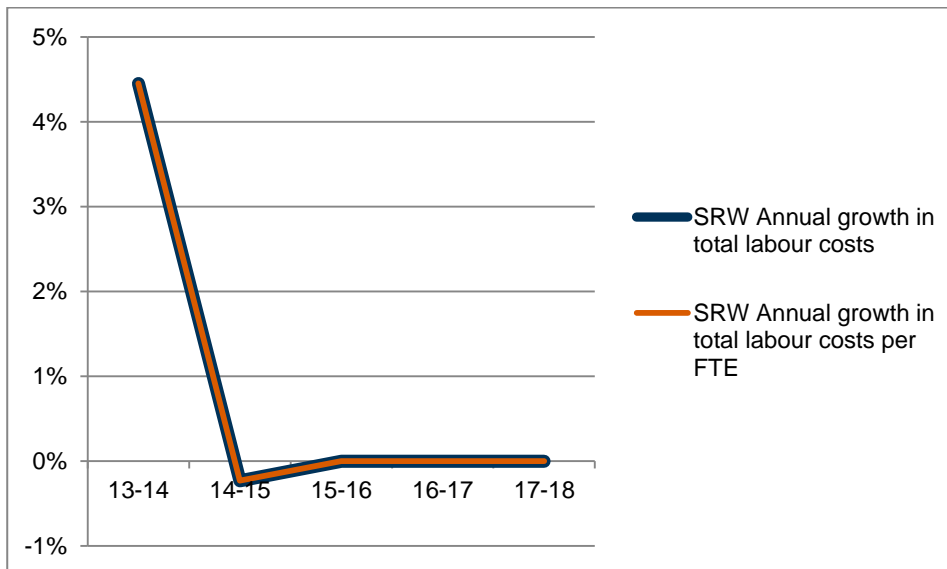


Figure 4-5 Percentage annual growth in total labour costs and labour cost per FTE

Table 4-5 SRW Labour growth assumptions

	13/14	14/15	15/16	16/17	17/18
Actual and forecast labour costs for FTEs (\$m)	13.56	13.52	13.52	13.52	13.52
Cost per FTE (\$000)	83.68	83.46	83.46	83.46	83.46
Annual growth in labour costs for FTEs	4.45%	(0.27%)	0%	0%	0%

Electricity

Because most of SRW's water supply is gravity fed, its electricity costs are mostly for office use and is a minor cost in its business as usual estimates. SRW expects to manage electricity price increases within its general basket of external costs and has therefore assumed a zero real electricity increase in this price path.

Chemicals

SRW provides raw water to its customers and hence the cost of chemicals forms an insignificant percentage of its business as usual activities in the form of weed spraying. As a result SRW has not escalated its chemical costs.

Productivity

In accordance with the ESC requirements, SRW is seeking to achieve a 1% per annum productivity gain until 2018 by actively generating efficiencies through improved work processes and targeted capital works. The implementation of the asset management system in 2013/14 will assist SRW to identify opportunities to achieve these efficiencies.

4.7 Conclusions and Recommendations

SRW has demonstrated in WP2 that it can set and achieve a 5 year budget forecast on its future operational expenditure.

In WP3 it has submitted a modest increase in its operational costs.

Its normalisation of 2011/12 operational expenditure to determine baseline operation expenditure is reasonable and its decreasing trend in costs over the price path is consistent with its peers.

The findings in Section 2.5 indicate that SRW has a strong focus on keeping its opex costs down and appears to be competitive in relation to irrigation network costs against the number of customers it serves. However this may be due to under-investment in maintenance. Implementation of the asset management system in 2013/14 will enable SRW to optimise its maintenance and renewal expenditure.

Its escalation factors are reasonable and consistent with expectations.

SRW's operational expenditure forecast reflects a focus on the business to keep its cost to customers low without jeopardising its standards of service. SRW will monitor the implications of the modernisation program and its maintenance strategies in WP3 to maintain a balance between service levels, risk, and cost.

5 Capital expenditure

5.1 Methodology

Our review of SRW's historic and forecast capital expenditure (capex) was based on interviews with key SRW staff, analysis of data provided and consideration of the following documents:

- > Water Plan 3 Submission
- > Water Plan 3 Financial Template
- > Information provided by SRW staff in response to interview questions and requests for clarification or supporting material.

5.2 Overview

Figure 5-1 illustrates the actual capital expenditure from 2008-2012 through to forecast expenditure in 2013-2018 and shows the following trends:

- > A significant increase in capital expenditure was incurred in 2007-2009 (due to \$15.2M rollover works from WP1 into WP2) and is forecast to increase again in 2012-2016 largely attributable to the forecast MID2030 works.
- > The main expenditure components are irrigation (mostly renewals) and bulk water (mostly related to dam safety).

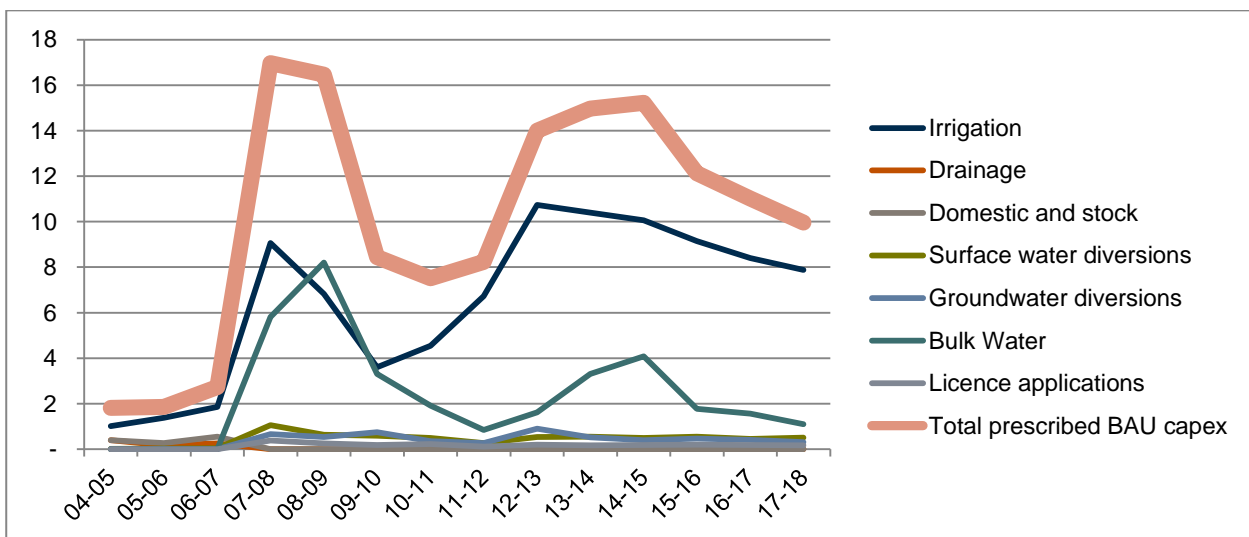


Figure 5-1 Historic actual and forecast BAU capital expenditure from 2004-2018

5.3 Capital expenditure in current price path

Capital expenditure in the current price path is summarised in Table 5-1. Figure 5-2 compares planned and actual expenditure during the price path.

Table 5-1 Actual capital expenditure in Water Plan 2 (\$12/13)

	08/09	09/10	10/11	11/12	12/13
Irrigation	6.82	3.60	4.55	6.73	10.74
Surface water diversions	0.64	0.60	0.49	0.26	0.54
Groundwater diversions	0.54	0.75	0.35	0.27	0.91
Bulk Water	8.20	3.32	1.91	0.85	1.63
Licence applications	0.25	0.18	0.22	0.12	0.20
Total prescribed BAU capex	16.46	8.44	7.52	8.23	14.01

The capital expenditure forecast for WP2 included MID2030 planned works of \$97M to provide an indication of the scale and scope of the exercise. Final arrangements for the delivery of the full program are still ongoing; however leading works for this project have been identified and have begun. Because of the significant value of the full package of these works, and that work on this program has only recently commenced (actual and forecast capital expenditure for WP2 is \$8.2M), MID2030 projects have been excluded for more meaningful analysis.

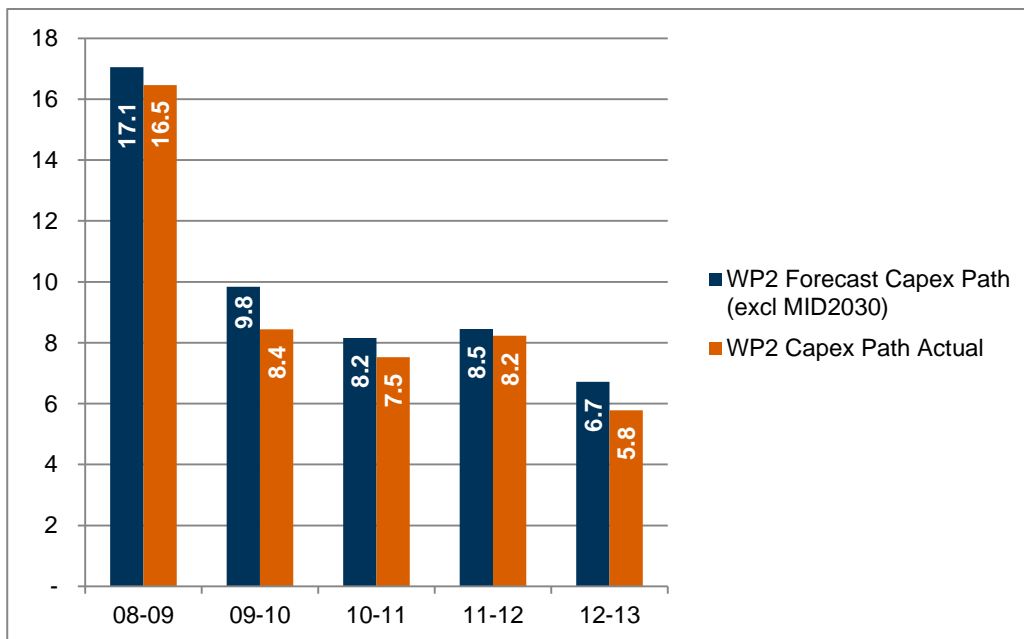


Figure 5-2 WP2 Forecast expenditure compared to actual expenditure

Figure 5-2 compares the adjusted WP2 forecast expenditure of \$50.2M against WP2 adjusted actual capital expenditure incurred of \$46.4M (as reported in the Water Plan 3 spreadsheet). This equates to a -7.5% variance on the forecast expenditure, that is, an underspend against forecast. The main reasons for this \$3.8M variance are:

- > \$6.5M underspend on minor projects. Approximately \$2M of these works has been deferred to WP3. The majority of the remaining underspend is a result of savings incurred on projects.
- > \$3.8M underspend in the Macalister Irrigation District Channel Automation Project as a result of the Federal government’s decision to no longer fund these works.
- > \$2.1M construction works for the Southern Outlet Bypass Valve at Glenmaggie Reservoir, originally budgeted for in the Channel Automation Project, but no longer funded by government.
- > \$2.1M of additional recoverable works at Yallourn as a result of project investigations identifying significant undermining. The additional works performed underwent a full business case review.

- > \$1M overspend in the embankment works at Melton Reservoir as a result of model studies identifying additional necessary construction works.
- > \$0.5M overspend in the Carp Damage Channel Rehabilitation program in the MID as a result of additional scope being identified.
- > \$0.5M overspend at Narracan due to additional works being required in the Anchor Lift project.

5.4 Capital expenditure in the future price path

SRW’s average annual capital spend in the future price path is \$12.6M per annum, which is \$1.7M more than the \$10.9M average annual spend in WP2. The increase is not substantial, and, given SRW’s track record in the delivery of its capital works, should be able to be within SRW’s capability to deliver.

The forecast capital expenditure program by service is listed in Table 5-2 and indicates that 72% of the scheduled works will be for irrigation assets and 19% for bulk water assets which has traditionally been the main areas of capital investment. Expenditure by driver is illustrated in Figure 5-3 which indicates that the primary drivers are renewals and improved service.

Table 5-2 Forecast capital expenditure program (\$M 12/13)

	13/14	14/15	15/16	16/17	17/18
Irrigation	10.40	10.06	9.15	8.40	7.88
Domestic and stock	-	-	-	-	-
Surface water diversions	0.55	0.50	0.55	0.45	0.51
Groundwater diversions	0.53	0.40	0.46	0.42	0.32
Bulk water	3.31	4.08	1.77	1.56	1.09
Licence applications	0.17	0.18	0.19	0.19	0.18
Total prescribed BAU capex	14.97	15.22	12.13	11.02	9.97

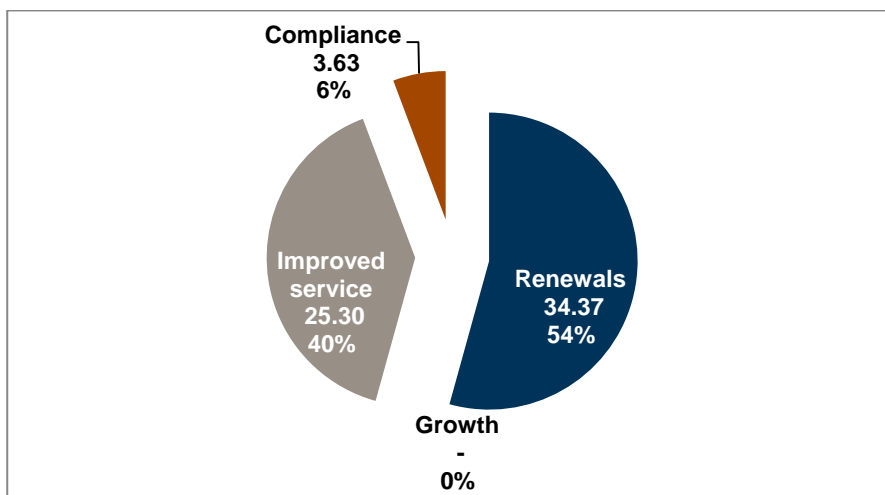


Figure 5-3 Forecast expenditure by driver

The major renewal expenditure is:

- > Channel renewal works (\$2.8M).
- > Replace Conduit at Melton Reservoir (\$2M).
- > IT Software and Hardware (\$2M).

> Vehicle purchases (\$8.4M).

In the case of vehicle purchases SRW has a fleet of approximately 130 vehicles and a policy to replace its vehicles every 80,000km. It is estimated that each vehicle does 35,000km per annum and hence are replaced almost every 2 years. This equates to 65 vehicles being replaced a year at \$26k per vehicle.

\$20.5M of the MID2030 works represents 80% of the forecast improved service expenditure of \$25.3M

The top capital projects are listed in Table 5-3.

Table 5-3 Water Plan 3 top capital projects (\$M 12/13)

Project	Total Cost (\$M)	Driver	Scope
Major projects			
MID2030: Southern Cowwarr Balancing Storage	6.4	Improved Service	To construct a balancing storage to act as a buffer between supply constraints and demand requirements alongside Nambrok Denison Main and 1 off take.
MID2030: Nambrok Denison Regulator Retrofit	4.7	Improved Service	To automate the irrigation delivery in 4 channels by modernising 27 in-channel regulators.
WIF: Piping or lining 4/1 Channel	4.0	Renewal	To renew the 4/1 pipe-channel system and improve access and operational characteristics.
MID2030: Outlet Rationalisation	3.7	Improved Service	The Outlet Rationalisation Program aims to retain the existing supply area and volume but to reduce the size of the asset base required to provide the service. It also seeks to improve service through the use of modern outlets.
Interim Flood Capacity design at Merrimu Reservoir	2.9	Compliance	Detailed design to raise and keep existing zone orientation option – Use a larger gabion (or other retaining wall) filter buttress to provide greater crest width and enable filters and clay core to be raised on existing alignment.
MID2030: Eastern Regulator Retrofit	2.7	Improved Service	To upgrade manually operated regulators to Flumegate® regulators. The nominated regulators are located on the Main Easter, Eastern 2, Eastern 7 and Eastern 11 channels.
Replace Conduit at Melton Reservoir	2.0	Renewal	To renew a severely deteriorated 750mm cast iron outlet conduit at Melton Reservoir.
Heyfield Regulator Retrofit	1.6	Improved Service	This project upgrades the manually operated regulators to FlumeGate™ regulators. The nominated regulators are located on the Heyfield 1 and the Heyfield 6 channels.
Carp Damage Channel Rehabilitation	1.5	Renewal	To repair channel banks damaged by European Carp within the MID to prevent bank collapse and potential interruption of irrigation supply.

5.5 Detailed review of sample capital projects

Water Plan 2 sample projects

Melton embankment protection

Driver: Compliance

The Melton Reservoir was outside the ANCOLD Limit of Tolerability for existing dams. The susceptibility of the right abutment to erosion was a major contributor to this noncompliance.

We viewed the business case and noted that it contained a thorough option analysis which clearly identified that the preferred solution was to extend the concrete apron on the current alignment and is estimated to cost \$3.4M which included a \$650k (20%) contingency. The project is ongoing.

Glenmaggie Reservoir southern outlet bypass valve

Driver: Improved service

The agreement for the MID Channel Automation Project involved the Commonwealth Government investing \$20M to achieve a target of 10,000 ML of savings for environmental flows. The final stage of the project involves automating the southern outlet to provide flow control compatible with the Total Channel Control (TCC) systems already installed downstream. The sequence to address this bypass valve last was a deliberate project decision to allow time to resolve the technical solution at the outlet (this project) and to resolve the logistics and contract issues with the hydro-power generation at the site.

TCC operation requires the ability for frequent (up to every 15 minutes) flow changes. These flows changes require reliable and repeatable behaviour performance. The existing outlet valves were commissioned in the 1950s and are suitable for only one or two movements per day.

In the past, the needle valves have had a major overhaul about every 20 to 30 years. If a full TCC system was introduced, the valves would receive as much service in a few months as they would receive in 30 years, creating an unacceptable risk of failure, along with a very high recurring cost (circa \$400,000 each service).

A detailed options analysis and cost estimate was performed in a business case approved by the Board on 2 June 2011 with the preferred option being identified to install an auxiliary off-take system on the southern outlet conduits. This would allow frequent changes in flow to occur without calling on additional duty for the large needle valves. This option would also allow the needle valves to be set at a relatively constant flow with smaller changes (up to 300ML/d) being made via the auxiliary off-take. This would cover nearly all flow changes and only large alterations in flow would require movement of the needle valves.

A detailed estimated of the works required was done by an external consultant to derive the \$2.5M estimate. This included contingencies of \$590k.

At the time of our review, the valve had been put into operation and tuning of the valve was still ongoing.

It is anticipated that this project will be fully completed by the end of the 2011/12, with costs to date at \$2.1M.

Water Plan 3 sample projects

As required under the scope set by the ESC, we have reviewed a sample of capital projects to inform our opinion of G-MW's future expenditure forecasts. Our findings are summarised below.

MID 2030 leading works program

Driver: Improved service

The MID2030 Leading Works Program represents \$28M of irrigation modernisation works in the Macalister Irrigation District and is expected to yield 15GL of water savings per annum.

Extensive investigation and customer consultation has occurred since 2007 to determine the appropriate capital works to be undertaken in this region to modernise this irrigation network and thereby improving network delivery efficiencies to its customers and contributing to the economic development of the MID.

Below is a review of a sample of the projects from this program scheduled for delivery in WP3.

Southern Cowwarr balancing storage

The nature of the Main Southern Channel does not allow for the full implementation of full Total Channel Control system due to legacy issues associated with the long distance from the Glenmaggie and Thomson and the lack of control on the Cowwarr channel. This results in reduced levels of service in the Southern Cowwarr supply system and increased outfalls at the Thomson River siphon outfall. In addition the current arrangement does not allow SRW to fully harvest surplus supplies from the Thomson system. Whilst there has been significant automation in the Southern-Cowwarr Supply Zone further automation will not be able to be implemented until the problem of control on the Main Southern Channel is resolved.

We were provided with a Problem Statement for this project and observed that it was endorsed by the General Manager, Strategic and Technical on 25 January 2012 and accepted by the Manager, Water Supply East on 26 January 2012 with the recommended option being to construct a balancing storage to act as a buffer between supply constraints and demand requirements alongside Nambrok Denison Main and 1 off-take. Preliminary project costing has been completed as part of the Problem Statement and once geotechnical and civil design is completed SRW will gain a better understanding of the storage design (control structures, filter, beaching and lining requirements), water saving and water harvest opportunities to be included in the Business Case.

The investigation and design of this project was approved by the SRW Board on 1 March 2012 and a final design tender for this project was awarded on 14 June 2012. Given the scope of works required, this detailed investigation is necessary so that SRW can include the most accurate estimate of the works required in the Business Case to be approved by the Board. This reduces the likelihood of significant variations to the cost or scope of the project occurring after the Business Case has been approved.

Eastern regulator retrofit

The Eastern System is a predominantly manually operated system which has had a modest investment in modernisation (four inline regulators and four outfall regulators). Analysis shows that the system has high outfall volumes which are considered to be high avoidable losses. This problem statement focuses on the Eastern Main, Eastern 2, Eastern 7 and Eastern 11 systems which has a combined outfall loss of 1,432ML based on 09/10 data. Based on prior experience, infrastructure solutions could save approximately 1,000ML (70%) in avoidable losses with a market value of \$2.0M, at an assumed value of \$2,000/ML.

The problem statement for this project was endorsed by the General Manager, Strategic and Technical on 4 February 2011 and accepted by the Manager, Water Supply on 24 February 2011. The document considered a range of options with the recommended solution being to automate the irrigation delivery in the 4 channels by modernising 33 in-channel regulators with works estimated at \$2.7M.

We were also provided with a copy of Business Case which provided a detailed analysis on the options available to validate the preferred solution. The Business Case provided a detailed estimate of \$2.7M including a 24% contingency.

The capital cost estimates were developed by SRW utilising recent capital costs incurred in the channel automation project. The cost estimates have been peer reviewed as part of the MID 2030 business case by an independent cost estimator who performed a Monte Carlo analysis using their own data set.

The cost of this project implies a cost of \$2,700 per ML of water saved as a result of improved efficiencies.

Conclusion on suitability of the inclusion of sampled MID2030 in WP3 forecasts

The MID 2030 projects reviewed are appropriate to providing improved service to SRW's customers. The projects have been supported by adequate analysis and reasonable cost estimates and it is realistic to expect that these works can be delivered in the timeframes proposed.

Werribee irrigation future program - Piping or lining of 4/1 channel**Driver: Renewal**

A problem statement has been prepared by the business demonstrating the need for rehabilitation of channel sections in the hybrid 4/1 pipe-channel system having high water losses and difficult access and operational characteristics. In the options analysis, detailed costing is provided for the relining (\$3M) and piping of the channels (\$6.4M).

Due to increased diameters of uPVC pipes coming onto the market the cost of piping the channel has come down significantly and revised costs are now estimated at \$4M.

The options analysis will be updated upon further validation of these estimates and then a business case will be prepared to substantiate the preferred option.

The proposed "Piping or lining of 4/1 channel" project is appropriate to SRW's infrastructure renewal driver. Whilst the project's analysis and cost estimates are still being refined to ratify the preferred solution of piping or lining – the process being followed by SRW is robust and has a strong focus on obtaining best value for money for its customers and it is reasonable to expect that the works proposed can be delivered in the timeframes proposed.

Replacement of conduit at Melton Reservoir**Driver: Renewal**

A review of the outlet works at Melton Reservoir was conducted by SMEC in 2009 and it was identified that the condition of the 760mm diameter, 70 meter long cast iron outlet pipe was very poor and that extensive corrosion had occurred. It was estimated that the conduit had less than six years of remaining life before the pipe strength was compromised.

A problem statement was endorsed by the General Manager, Strategic and Technical on 16 February 2011 and accepted by the Manager, Water Supply.

The business case was prepared in August 2012 and approved by the Board on 24 August 2012.

A comprehensive options analysis and costing estimate was performed in the business case which identified the preferred solution at a cost of \$2.7M including a 33% contingency. SRW has allowed for \$2M in its WP3 submission.

The proposed "Replacement of conduit at Melton Reservoir" project is appropriate to SRW's infrastructure renewal driver. The project has been supported by adequate analysis and reasonable cost estimates and it is realistic to expect that these works can be delivered in the timeframes proposed.

Heyfield regulator retrofit**Driver: Improved Service**

The irrigation method in the Heyfield area is predominately gravity fed surface irrigation and is expected to remain so for some time. A major factor in the efficiency of this method is the ability to deliver constant flow rates. The irrigation supply is from the Southern Main Channel. This channel is in good working condition having been remodelled in the 1950's and was upgraded to automated regulators in 2006.

Structures within the Heyfield distribution network are generally in reasonable condition and suited to the retrofitting process as the manually operation system fails to provide adequate service levels to customers in that area.

The objective of this project is to automate 32 manually operated regulators, generating an estimated 920 ML of water savings.

We were provided with a copy of the Business Case for this project that was approved by the SRW Board on 4 October 2012 that considered a variety of options to identify the preferred solution. The cost of this project is estimated at \$2.48M and has a 20% contingency. Estimates were determined using unit rates from recently completed retrofit works incurred in the Eastern and Nambrok-Denison Regulator Retrofit projects.

Works valued at \$900k is forecast to be constructed in 2012/13 with the balance of works to be delivered in WP3.

The cost of this project implies a cost of \$2,608 per ML of water saved as a result of improved efficiencies.

This project is appropriate to providing improved service to SRW's customers. The project has been supported by adequate analysis and reasonable cost estimates and it is realistic to expect that these works can be delivered in the timeframes proposed.

5.6 Recommendations and conclusions

From discussions with SRW staff, a review of a sample of historical and forecast capital projects including supporting documentation and a high level review of asset management and capital delivery processes we consider that the capital projects undertaken in WP2 and proposed in WP3 are:

- > Appropriate to key drivers and obligations.
- > Are supported by adequate supporting analysis and systems.
- > Are deliverable over the regulatory period.
- > And, for projects planned for WP3, have reasonable cost estimates.

6 Recommended opex and capex expenditure

Following our review of SRW's proposals for the upcoming Water Plan 3 regulatory period, we recommend that SRW be allowed to recover in its revenue requirements the operating and capital expenditure detailed in Table 6-1 and Table 6-2.

Table 6-1 Recommendations for SRW's Operating Expenditure Forecasts

	13/14	14/15	15/16	16/17	17/18
Final water plan	21.36	21.06	20.87	20.71	20.56
Cardno revised	21.36	21.06	20.87	20.71	20.56
Net change	-	-	-	-	-

Table 6-2 Recommendations for SRW's Capital Expenditure Forecasts

	13/14	14/15	15/16	16/17	17/18
Final water plan	14.97	15.22	12.13	11.02	9.97
Cardno revised	14.97	15.22	12.13	11.02	9.97
Net change	-	-	-	-	-