Final Draft Report

SunWater Water Supply Schemes

2012-2017 Price Paths

Analysis of SunWater's 2006-07 to 2010-11 Renewals Expenditure Forecasts

Prepared for:

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APPENDICES

MANAGEMENT SUMMARY

Background

Indec Consulting has been engaged by the Queensland Competition Authority (the Authority) to complete an analysis of SunWater's 2006-07 to 2010-11 Forecast Renewals Expenditure relating to irrigation services to deliver the following outputs on a service contract basis:

(i) provide an electronic file of SunWater's forecast renewals annuities for 2006-07 to 2010-11 on a project by project basis excluding overheads;

(ii) compare previously forecast renewals expenditures from 2006-07 to 2010-11 excluding overheads with:

- actual expenditure over that period excluding overheads;
- an adjusted renewals forecast based on an index to be advised by the Authority before the commencement of the consultancy;
- an adjusted renewals forecast based on SunWater's approach proposed for the next price path; and
- an adjusted renewals forecast based on actual ABS annual rates of inflation for the period;

(iii) identify for those service contracts where actual costs have exceeded forecast costs by 30% over the indexed estimated costs for each irrigation service contract;

(iv) for those service contracts identified in (iii) above, identify projects the cost of which exceeds 5% of actual total annual renewals costs;

(v) review SunWater's proposed methodology for converting the 22 scheme Asset Restoration Reserve (ARR) balances into separate ARR balances for each distribution system and bulk segment; and

(vi) determine whether the application of the methodology adopted by SunWater in (v) above generates an appropriate result and, if not, recommend adjusted opening balances for relevant scheme segments for 2012-13.

For (ii), identify and adjust for unplanned expenditure during that period (details to be sought from and provided by SunWater) and for any expenditure deemed not to be prudent by the Authority.

Methodology

Indec's analysis contained within this report is based on the forecasts prepared by SunWater during the negotiation process with customer representatives to set the 2006-07 to 2010-11 irrigation price paths. The outcomes of this negotiation process, including the forecast total costs for the period 2006-07 to 2010-11 or the lower bound cost targets, were documented in the report titled *SunWater Irrigation Price Paths 2006/07 - 2010/11 Final Report*.

The analysis within this report has considered the SunWater business restructure which occurred in 2006 and the data collection restructure which occurred in 2007 on the implementation of the Business Operating Model (BOM). This required Indec to restructure the 2006-07 to 2010-11 forecast renewals expenditure based on a water supply scheme basis to match the current data reporting structures based on a service contract format. The restructuring and data mapping of the forecast data is further explained in Section 2.5 of this report.

Issues Impacting on Analysis and Interpretations

The analysis and the interpretation of the results in this report need to consider the issues associated with the potential change in definition of direct cost and the treatment of the efficiency savings.

Direct Cost Analysis

The scope of this review was based on a direct costs basis excluding overheads. For the purposes of this report, Indec has prepared the analysis on the basis that all indirect and overhead costs are assumed to be non-direct costs and are excluded from actual renewals expenditure for comparative purposes.

Section 2.2 of the report outlines the potential impacts on the comparison resulting from the introduction of BOM and the associated changes in the financial data structure. The potential impacts arise due to the change in definition of direct, indirect and overhead costs, consequently the comparison of direct costs from the forecast renewals expenditure to the direct costs of actual renewals expenditure may not be based on an equivalent basis. Indec has discussed this issue with SunWater to understand the extent of the changes in definition of direct cost, indirect cost and overhead and the impacts this will have on the analysis undertaken in this report. SunWater has yet to provide Indec with any detailed information to assist with the analysis.

Any change in definition of a direct, indirect and overhead cost between the approach applied to prepare the forecasts and the current definitions applied by SunWater in reporting actual results is likely to have implications on the ARR balance. In the calculation of the 2006-07 to 2010-11 irrigation price paths, indirect costs applicable to water supply schemes were fully allocated to forecast operating costs only and not allocated to forecast renewals expenditure. Given this, the allocation of indirect and overhead costs to actual renewals expenditure for the purposes of rolling forward the ARR has the potential to lead to adverse pricing outcomes.

Allocating actual indirect and overhead costs to renewals expenditure may result in the allocated indirect and overhead costs being recovered twice from customers. These cost are likely to have been recovered via the tariffs set for the 2006-07 to 2010-11 irrigation price paths and potentially will be recovered for a second time in future price paths.

This situation may arise as the allocated indirect and overhead costs are captured in the ARR balance and consequently increase the level of the renewals annuity and irrigation tariffs for future price paths.

The Authority will need to give this issue further consideration and assess the likely impacts on the analysis and the ARR balances. If material differences arise due to the change in the definition of direct, indirect and overhead costs between the development of forecasts and the current practices, Indec would recommend that adjustments are required to maintain the integrity of the ARR balances and to avoid any potential double recovery of costs.

Indec Efficiency Savings

A direct comparison of forecast costs and actual costs at the activity level may include variances resulting from SunWater adopting a different approach to implementing any Indec efficiency savings to that implied by the adjustments made to the forecast data based on Indec's methodology to develop the efficiency targets. Section 2.4 of this report provides further details.

Indec did not recommend how the savings should be achieved, rather it provided a guide rather than a prescriptive direction to SunWater on how it could operate efficiently. Indec stated in its recommendations that the final distribution of savings among individual cost centres and activities should be at the absolute discretion of SunWater.

Analysis of Forecast Renewals Expenditure 2006-07 to 2010-11

Indec provided the Authority with an electronic file containing the forecast renewals expenditure at the project level which formed the basis of the 2006-07 to 2010-11 irrigation price paths. This data set included the efficiency gains as agreed during the price negotiations with the Tier 1 Group to set the 2006-07 to 2010-11 irrigation price paths. The 2006-07 to 2010-11 cost forecasts were based in 2005/06 dollars and did not include any annual rate of cost escalations.

A subsequent version of the electronic file included a comparison of forecast renewals expenditure to actual renewals expenditure both including and excluding indirect and overhead costs.

High Level Analysis of Actual Renewals Expenditure

SunWater has advised that the renewals expenditure over the 2006-07 to 2010-11 period has been influenced by a number of factors resulting in actual costs above forecast. Significant spending on new programs which were not included in the forecasts such as the Intersafe program and the public safety initiative have contributed significantly to expenditure above forecasts.

Other influences have involved significant unit cost and latent condition variations on major projects such as the Whetstone Weir project in the Macintyre Brook Service Contract. SunWater also advised that significant expenditure has also arisen as a result of flood events in 2009 and 2010.

Figure m.1 below shows a high level summary of the actual direct renewals expenditure costs by activity which assists in identifying the magnitude of actual expenditure by activity type. SunWater has cautioned Indec that the data relating to the 2007 year has some anomalies in terms of cost classifications and for this reason Indec has placed a lower reliance level on interpreting results for the 2007 year.

Activity Code	Activity Description	Sub Activity Description	2007	2008	2009	2010	2011
01-03	Operations	Enviro Mgt	9,382	-	-	-	-
01-07	Operations	Dam Safety	70,838	-	363,734	67,261	10,139
03-01	Corrective	Sched Corr Maint	-	-	2,380,490	320,889	3,920,319
04-01	Refurbishment & Enhancement	R&E	4,854,986	5,283,196	6,259,941	8,527,589	4,021,179
04-02	Refurbishment & Enhancement	Rec Fac	20,055	-	-	-	-
04-04	Refurbishment & Enhancement	R&E Treatment	139,172	3,082	-	-	-
04-08	Refurbishment & Enhancement	R&E Enhance	573,457	386,969	29,307	8,713	-
04-50	Refurbishment & Enhancement	Intersafe	-	-	-	4,798,876	7,594,730
	Other		9,737	-	-	-	-
Total			**5,677,628**	**5,673,248**	**9,033,472**	**13,723,327**	**15,546,366**

Figure m.1 Analysis of Actual Direct Renewals Expenditure by Activity ($ nominal)

Figure m.1 shows that the overall trend has involved an increase in the total expenditure over the five year period, from $5.7m in 2007 to $15.5m in 2011. Figure m.1 shows that actual non-routine expenditure relating to operations and corrective maintenance activities have been classified as renewals expenditure. Indec's high level analysis of this data post 2007 is indicating that the actual expenditure recorded against operating activities relates to the Bedford Weir incident and the corrective maintenance expenditure relates to flood damage repairs with significant flooding events arising in 2009 and 2011.

Comparison of Forecast Renewals Expenditure with Actual Renewals Expenditure

Figure m.2 below details the results of the comparison of the adjusted forecast renewals expenditure based on the Authority's preferred cost index to the actual renewals expenditure over the five year period 2006/07 to 2010/11 on a service contract basis.

Figure m.3 below shows the absolute and relative variances when comparing actual renewals expenditure against the adjusted forecast renewals expenditure based on the Authority's preferred cost index.

Figure m.3 shows that total SunWater actual expenditure was below forecast expenditure in the first two years of 20% and 27% respectively with actual expenditure above forecast expenditure of between 16% and 98% over the following 3 year period.

	Actual, Nominal $					Forecast (IPM), Nominal $ (4% Indexation, Targeted Indec Efficiency Saving)				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Bundaberg Irrigation Distribution	992,148	655,900	665,233	946,883	1,560,223	868,506	720,336	529,157	855,057	1,099,041
Burdekin Irrigation Distribution	864,964	662,841	2,493,600	2,361,062	2,631,903	1,717,249	1,413,853	2,683,790	2,939,209	2,176,648
Dawson Irrigation Distribution	0	42,957	113,630	466,652	894,077	85,363	156,307	113,726	201,392	195,981
Emerald Irrigation Distribution	101,050	147,285	580,863	1,640,511	689,707	139,670	189,877	138,134	108,913	245,209
Eton Irrigation Distribution	17,926	31,897	231,540	613,198	499,761	50,002	9,750	74,793	80,060	118,813
Lower Mary Irrigation Distribution	43,085	70,244	132,076	108,239	141,079	66,033	160,178	192,398	139,650	58,853
Mareeba Irrigation Distribution	739,374	895,029	1,063,945	2,350,970	2,604,135	1,061,291	1,164,362	1,229,037	863,598	1,023,585
St George Irrigation Distribution	55,666	22,262	204,908	281,089	1,790,558	96,510	82,668	377,006	449,373	52,506
Barker Barambah Water Supply	74,358	86,304	54,223	83,523	266,714	183,612	102,034	89,124	62,887	100,096
Bowen Broken Water Supply	7,363	46,234	350,452	181,168	343,420	86,952	-2,583	76,138	114,158	62,991
Boyne Water Supply	46,671	5,009	133,655	36,661	115,598	73,695	69,795	179,393	237,948	83,712
Bundaberg Water Supply	96,253	171,175	365,331	416,082	725,424	384,904	422,522	332,717	336,940	270,912
Burdekin Water Supply	179,870	259,748	254,656	315,099	128,561	79,240	124,003	66,784	7,187	92,318
Callide Water Supply	26,832	41,215	73,405	73,789	80,731	98,532	243,863	226,002	262,665	171,540
Chinchilla Weir Water Supply	0	2,309	38,196	12,503	4,911	6,095	39,268	3,231	3,325	0
Cunnamulla Weir Water Supply	720	0	20,056	0	3,180	0	0	0	0	23,080
Dawson Water Supply	117,799	76,557	79,944	78,279	180,976	116,307	61,035	46,164	216,049	212,209
Eton Water Supply	233,706	170,552	204,665	345,417	259,063	205,458	83,738	108,688	38,792	141,608
Lower Fitzroy Water Supply	7,516	2,782	57,975	15,844	81,339	0	10,334	0	27,708	53,083
Lower Mary Water Supply	40,216	14,966	16,671	56,888	18,143	47,593	14,310	-14,167	-14,577	19,442
Macintyre Brook Water Supply	125,837	482,351	665,801	595,423	348,586	198,099	795,914	164,265	134,108	133,861
Maranoa Water Supply	2,352	0	0	1,184	0	0	0	0	0	28,849
Mareeba Water Supply	55,327	20,158	45,890	18,699	93,963	121,188	229,191	63,868	50,199	357,043
Nogoa Water Supply	812,458	572,685	322,967	595,089	361,209	74,160	343,628	342,537	536,647	161,557
Pioneer Water Supply	100,954	487,511	482,308	1,413,776	505,805	226,036	133,391	96,945	59,850	169,635
Proserpine Water Supply	50,237	41,027	72,498	9,348	40,080	54,267	44,866	27,810	59,205	88,762
St George Water Supply	392,427	172,765	116,422	283,836	266,888	335,245	484,805	178,809	166,250	248,105
Three Moon Water Supply	-1,494	36,894	34,429	13,045	2,906	45,715	50,957	52,191	66,500	126,938
Upper Burnett Water Supply	138,223	125,252	70,337	242,301	521,623	210,588	274,719	138,793	231,476	178,053
Upper Condamine Water Supply	355,790	329,339	87,797	166,768	385,803	424,137	304,327	269,364	264,891	140,549
Total	**5,677,628**	**5,673,248**	**9,033,472**	**13,723,327**	**15,546,366**	**7,056,449**	**7,727,446**	**7,786,700**	**8,499,462**	**7,834,977**

Figure m.2 Analysis of Actual Direct Renewals Expenditure by Activity based on Authority's preferred cost index ($ nominal)

	$ Variance					% Variance				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Bundaberg Irrigation Distribution	123,642	-64,435	136,075	91,826	461,182	14%	-9%	26%	11%	42%
Burdekin Irrigation Distribution	-852,285	-751,013	-190,190	-578,147	455,255	-50%	-53%	-7%	-20%	21%
Dawson Irrigation Distribution	-85,363	-113,350	-96	265,259	698,096	-100%	-73%	-0%	132%	356%
Emerald Irrigation Distribution	-38,620	-42,592	442,728	1,531,599	444,499	-28%	-22%	321%	1406%	181%
Eton Irrigation Distribution	-32,076	22,148	156,747	533,138	380,949	-64%	227%	210%	666%	321%
Lower Mary Irrigation Distribution	-22,948	-89,934	-60,322	-31,410	82,226	-35%	-56%	-31%	-22%	140%
Mareeba Irrigation Distribution	-321,917	-269,333	-165,092	1,487,372	1,580,550	-30%	-23%	-13%	172%	154%
St George Irrigation Distribution	-40,844	-60,407	-172,099	-168,284	1,738,052	-42%	-73%	-46%	-37%	3310%
Barker Barambah Water Supply	-109,254	-15,730	-34,902	20,636	166,618	-60%	-15%	-39%	33%	166%
Bowen Broken Water Supply	-79,589	48,817	274,314	67,010	280,429	-92%	-1890%	360%	59%	445%
Boyne Water Supply	-27,024	-64,786	-45,737	-201,287	31,886	-37%	-93%	-25%	-85%	38%
Bundaberg Water Supply	-288,651	-251,347	32,615	79,142	454,512	-75%	-59%	10%	23%	168%
Burdekin Water Supply	100,630	135,745	187,872	307,912	36,243	127%	109%	281%	4284%	39%
Callide Water Supply	-71,701	-202,648	-152,597	-188,876	-90,809	-73%	-83%	-68%	-72%	-53%
Chinchilla Weir Water Supply	-6,095	-36,959	34,965	9,178	4,911	-100%	-94%	1082%	276%	No Forecast
Cunnamulla Weir Water Supply	720	0	20,056	0	-19,900	No Forecast	No Forecast	No Forecast	No Forecast	-86%
Dawson Water Supply	1,492	15,522	33,780	-137,770	-31,233	1%	25%	73%	-64%	-15%
Eton Water Supply	28,248	86,814	95,976	306,626	117,455	14%	104%	88%	790%	83%
Lower Fitzroy Water Supply	7,516	-7,551	57,975	-11,865	28,257	No Forecast	-73%	No Forecast	-43%	53%
Lower Mary Water Supply	-7,376	656	30,838	71,465	-1,300	-15%	5%	-218%	-490%	-7%
Macintyre Brook Water Supply	-72,262	-313,563	501,536	461,314	214,725	-36%	-39%	305%	344%	160%
Maranoa Water Supply	2,352	0	0	1,184	-28,849	No Forecast	No Forecast	No Forecast	No Forecast	-100%
Mareeba Water Supply	-65,861	-209,033	-17,978	-31,500	-263,080	-54%	-91%	-28%	-63%	-74%
Nogoa Water Supply	738,298	229,057	-19,570	58,442	199,652	996%	67%	-6%	11%	124%
Pioneer Water Supply	-125,082	354,119	385,363	1,353,926	336,171	-55%	265%	398%	2262%	198%
Proserpine Water Supply	-4,030	-3,839	44,688	-49,857	-48,682	-7%	-9%	161%	-84%	-55%
St George Water Supply	57,183	-312,041	-62,387	117,586	18,782	17%	-64%	-35%	71%	8%
Three Moon Water Supply	-47,210	-14,062	-17,762	-53,455	-124,032	-103%	-28%	-34%	-80%	-98%
Upper Burnett Water Supply	-72,365	-149,466	-68,456	10,825	343,570	-34%	-54%	-49%	5%	193%
Upper Condamine Water Supply	-68,347	25,011	-181,568	-98,123	245,254	-16%	8%	-67%	-37%	174%
Total	**-1,378,821**	**-2,054,198**	**1,246,772**	**5,223,865**	**7,711,388**	**-20%**	**-27%**	**16%**	**61%**	**98%**

Positive variance means Actual is higher than Forecast. Negative variance means Actual is lower than Forecast.

Figure m.3 Analysis of Direct Renewals Expenditure Variances by Activity based on Authority's preferred cost index ($ nominal)

Some of the key observations from this comparison at the service contract level are summarised below:

- Two service contracts experienced actual expenditure above forecast in all five years – Burdekin Water Supply and Eton Water Supply.
- Three service contracts resulted with actual expenditure below forecasts in all five years - Callide Water Supply, Mareeba Water Supply and Three Moon Water Supply.
- The Burdekin Irrigation Distribution experienced the three largest below forecast variances in 2007, 2008 and 2010 of $852,285, $751,013 and $578,147 respectively.
- Mareeba Irrigation Distribution resulted with two of the three largest above forecast variances in 2011 and 2010 of $1,580,550 and $1,487,372 respectively.
- Emerald Irrigation Distribution experienced the second largest above forecast variance of $1,531,599 in 2010 with Pioneer Water Supply having an above forecast variance in 2010 of $1,353,926.

The analysis in Section 3.4 applied two other forms of cost indexation based on SunWater's proposed cost indexation for the 2012-13 to 2016-17 irrigation price paths and indexation based on the actual CPI outcomes. The application of the various cost indexation factors has not altered the overall outcomes of the comparisons with similar trends emerging at the total level and at the service contract level. The application of the different cost indexes essentially changes the size of the variances under the different approaches.

Analysis of High Value Projects

Indec performed a cost comparison of actual cash spend projects matched with forecast cash spend projects for the 2006-07 to 2010-11 period. The cost comparison includes only those projects funded from the renewals annuity and excludes any projects directly funded by third parties such as dam safety upgrades.

The matching process was made more difficult due to the actual project descriptions being truncated in the data file received from SunWater. Numerous ambiguities remained and a significant number of actual and forecast projects could not be matched. Where numerous forecast projects could have matched an actual project, sometimes the decision was made to match the lowest cost forecast project in order to be conservative and flag a greater number of projects for review.

Limitations and Qualifications on Project Matching

Indec's ability to match projects was based on a considerable level of judgement due to the limitations of the forecast and actual data sets not including a unique project identifier to enable a match of forecast with actual projects. Indec has applied its best endeavours to match appropriate projects and is unable to provide any surety that the matched projects are identical projects or that

all relevant projects selected in the samples have been matched. Any interpretations of the results of the matching process should consider these limitations and qualifications on the matching process.

Results of the Project Matching Process

The outcome of the project matching process following the criteria outlined in the Authority's ToR and adopting the process outlined in Section 3.5 above, resulted in 125 actual projects matching with 275 forecast projects. Appendix A provides details for each service contract.

From the set of matched projects, actual expenditure on 28 projects varied above their forecast expenditure by greater than or equal to the Authority's 30% exceedance threshold. The average variance above forecast for these 28 projects is 154% or a total of $2.4m. Figure m.4 below details the results of the project matching exercise.

From the set of 125 matched projects, the average variance between forecast expenditure and actual expenditure resulted in a 24% variance below forecast.

It should be noted that the results of the matching process is influenced by extreme outliers skewing the result.

The matching process identified the two largest outlier projects with actual expenditure above forecast as:

- Pioneer Water Supply, Marian Weir Outlet Works - $1.1m above forecast variance
- Macintyre Brooke Water Supply, Major Refurb of Whetstone Weir - $500,000 above forecast variance

The average variance for the remaining 97 projects, which are below the Authority's 30% exceedance threshold, resulted is a 60% average variance below forecast or a total of $4.7m expenditure below forecasts. The largest outlier (underspend) projects, with rough descriptions and amounts, are:

- Burdekin Irrigation Distribution, Replace SMO with MO - $1m below forecast variance
- St George Water Supply, Gate Refurb - $500,000 below forecast variance
- Burdekin Water Supply, Pump Refurb - $400,000 below forecast variance
- Emerald Irrigation Distribution, Selma Drain Desilt - $300,000 below forecast variance
- Upper Burnett Water Supply, Replace Meter Outlets - $300,000 below forecast variance
- Bundaberg Irrigation Distribution, Refurb Pump - $200,000 below forecast variance

Description, Actual	Description, Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
Bundaberg Irrigation Distribution		**-**	**-**	**31,539**	**189**	**-**	**-**	**-**	**21,418**	**129**	**-**	**-**	**-**	**10,121**	**61**	**-**	
Refurbish Regulator Gate 1 (repaint, ano																	
	REGULATOR GATE Refurbish Gate - remove, repaint, anodes & bearings, install - moved from 2004	-	-	31,539	189	-	-	-	21,418	129	-	-	-	10,121	61	-	47%
Burdekin Irrigation Distribution		**265,112**	**-**	**-**	**13,335**	**200,846**	**203,179**	**-**	**-**	**1,075**	**16,190**	**61,934**	**-**	**-**	**12,260**	**184,655**	
10BRI14 Install Walkways & Handrails BMC																	
	BOUNDARY FENCING Refurbish Fence - replace wires and posts as required	-	-	-	13,335	200,846	-	-	-	1,075	16,190	-	-	-	12,260	184,655	1141%
A731 Millaroo Ch 3Earth Ch 05-001392																	
	LATERAL 3 Refurbish Earth Channel 3 with HDPE Pipeline	265,112	-	-	-	-	203,179	-	-	-	-	61,934	-	-	-	-	30%
Dawson Irrigation Distribution		**-**	**-**	**19,639**	**5,981**	**-**	**-**	**-**	**13,390**	**4,078**	**-**	**-**	**-**	**6,248**	**1,903**	**-**	
Install Signs - Theodore Irrigation																	
	THEODORE SECTION Refurbish: WH&S Install warning signs	-	-	19,639	5,981	-	-	-	13,390	4,078	-	-	-	6,248	1,903	-	47%
Lower Mary Irrigation Distribution		**-**	**10,648**	**8,506**	**20,379**	**12,878**	**-**	**6,875**	**4,804**	**10,843**	**8,420**	**-**	**3,773**	**3,702**	**9,536**	**4,458**	
07-002568 Walker Pt: WHS-Study & impleme																	
	MAIN WALL Refurbish: implementation of safety items raised at	-	10,648	5,584	-	-	-	6,875	3,605	-	-	-	3,773	1,979	-	-	55%
09MVA06 Repl. Cmn Control-Owanyilla Pump																	
	CONTROL Replacement	-	-	2,922	10,223	3,649	-	-	1,198	4,193	1,497	-	-	1,723	6,030	2,153	144%
10MVA13 Refurb Fence along Channel WPMC																	
	FENCE Refurbish Fence - refurbishment & selective	-	-	-	10,156	-	-	-	-	6,650	-	-	-	-	3,506	-	53%
11MVA02 Install Concrete Surrounds and C																	
	CONCRETE STRUCTURE Refurbish: Screens - check if exists	-	-	-	-	9,229	-	-	-	-	6,924	-	-	-	-	2,305	33%
Mareeba Irrigation Distribution		**89,830**	**-**	**-**	**-**	**-**	**5,079**	**-**	**-**	**-**	**-**	**84,751**	**-**	**-**	**-**	**-**	
07MBA36 Refurbish Road/Berm network																	
	ROADS WITHIN BIB Refurbish Road - high priority (refer	89,830	-	-	-	-	5,079	-	-	-	-	84,751	-	-	-	-	1668%
Barker Barambah Water Supply		**-**	**30,234**	**-**	**-**	**-**	**-**	**20,667**	**-**	**-**	**-**	**-**	**9,566**	**-**	**-**	**-**	
07-002441 BP Dam: Study: Dam 5 yearly da																	
	BJELKE-PETERSEN DAM Study: Dam safety inspection @	-	30,234	-	-	-	-	20,667	-	-	-	-	9,566	-	-	-	46%
Bowen Broken Water Supply		**-**	**-**	**169,978**	**-**	**-**	**-**	**-**	**42,548**	**-**	**-**	**-**	**-**	**127,430**	**-**	**-**	
Refurb Protection Works-Bowen River Weir																	
	PROTECTIVE WORKS Refurbish Pwks - reinstate concreted	-	-	141,298	-	-	-	-	26,929	-	-	-	-	114,369	-	-	425%
Regrade & Resurface Access Roads at Outl																	
	ACCESS ROAD Refurbish Road - imported material, structure	-	-	28,680	-	-	-	-	15,619	-	-	-	-	13,061	-	-	84%
Bundaberg Water Supply		**-**	**22,259**	**12,114**	**-**	**-**	**-**	**13,578**	**7,390**	**-**	**-**	**-**	**8,681**	**4,724**	**-**	**-**	
07-002508 Ben &erson: Refurbish Gate - c																	
	FIXED WHEEL GATE NO1 Refurbish Gate - corrosion, rope,	-	22,259	12,114	-	-	-	13,578	7,390	-	-	-	8,681	4,724	-	-	64%
Burdekin Water Supply		**10,274**	**23,226**	**19,684**	**-**	**-**	**5,550**	**10,775**	**8,735**	**-**	**-**	**4,724**	**12,451**	**10,949**	**-**	**-**	
06-004201 Gantry Crane Refurb Winches																	
	GANTRY CRANE Refurbish Winches - drums, ropes, drives etc	10,274	4,852	-	-	-	5,550	2,621	-	-	-	4,724	2,231	-	-	-	85%
07-007171 B Falls Dam O'haul Radial Gate																	
	LEFT HAND RADIAL GATE Refurbish: paint, bearings	-	18,374	19,684	-	-	-	8,154	8,735	-	-	-	10,220	10,949	-	-	125%

Figure m.4 Results from Project Matching showing projects with above 30% exceedance ($ nominal with 4% indexation applied to forecast)

Description, Actual	Description, Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
Callide Water Supply		**-**	**-**	**53,829**	**3,653**	**-**	**-**	**-**	**30,315**	**2,058**	**-**	**-**	**-**	**23,514**	**1,596**	**-**	
Install & Refurb Fencing - Callide DC																	
	CALLIDE DIVERSION CHANNEL Refurbish: Installation of	-	-	53,829	3,653	-	-	-	30,315	2,058	-	-	-	23,514	1,596	-	78%
Dawson Water Supply		**-**	**-**	**-**	**26,036**	**17,880**	**-**	**-**	**-**	**6,001**	**6,241**	**-**	**-**	**-**	**20,035**	**11,639**	
09DVA18 Pump 2 MOS repairs																	
	PUMP NO2 Refurbish Pump; Not in 03 budget so moved out a	-	-	-	26,036	-	-	-	-	6,001	-	-	-	-	20,035	-	334%
11DVA10 Replace Communications and Contr																	
	REMOTE TELEMETRY UNIT Change Out - major problems with	-	-	-	-	17,880	-	-	-	-	6,241	-	-	-	-	11,639	186%
Eton Water Supply		**117,510**	**19,416**	**-**	**-**	**-**	**73,411**	**12,129**	**-**	**-**	**-**	**44,100**	**7,286**	**-**	**-**	**-**	
06-006325 PSTN 1, 2, 3 New Metering																	
	MIRANI DIV PUMP STATION 1 Enhance:Rising Main Metering	117,510	19,416	-	-	-	36,705	6,065	-	-	-	44,100	7,286	-	-	-	60%
	RISING MAIN PUMP STN NO 2 Enhance:Rising Main Metering	-	-	-	-	-	36,705	6,065	-	-	-	-	-	-	-	-	-
Lower Fitzroy Water Supply		**-**	**-**	**22,084**	**-**	**-**	**-**	**-**	**11,541**	**-**	**-**	**-**	**-**	**10,543**	**-**	**-**	
Refurb Hydraulic Syst-Eden Bann Fishlock																	
	HYDRAULIC SYSTEM Refurbish Hyd - replace minor valves,	-	-	22,084	-	-	-	-	11,541	-	-	-	-	10,543	-	-	91%
Macintyre Brook Water Supply		**-**	**349,835**	**600,521**	**173,961**	**864**	**-**	**199,194**	**341,933**	**99,052**	**492**	**-**	**150,641**	**258,588**	**74,908**	**372**	
IPS08MAB11 Refurbish: Major Refurb of We																	
	ALL DRAINS LEFT BANK NFA Whestone Weir Refurbishment	-	349,835	600,521	173,961	864	-	199,194	341,933	99,052	492	-	150,641	258,588	74,908	372	76%
Pioneer Water Supply		**14,524**	**46,443**	**116,892**	**1,143,316**	**13,059**	**8,496**	**13,554**	**27,970**	**156,284**	**1,785**	**6,028**	**32,890**	**88,922**	**987,033**	**11,274**	
06-005254 TD Risk Assessment Spillway																	
	TEEMBURRA DAM MAIN WALL Study: Risk Assessment -	10,660	11,797	19,634	-	-	7,967	8,818	14,675	-	-	2,692	2,979	4,958	-	-	34%
A783 Marian Weir Outlet Works05-001444																	
	OUTLET WORKS Enhancement: Enlarge the outletworks -	3,864	34,647	97,258	1,143,316	13,059	528	4,736	13,295	156,284	1,785	3,336	29,911	83,964	987,033	11,274	632%
Proserpine Water Supply		**30,182**	**22,070**	**11,593**	**-**	**-**	**17,823**	**15,430**	**8,105**	**-**	**-**	**12,359**	**6,641**	**3,488**	**-**	**-**	
06-005255 PFD Overtop&Spillway Upgde cos																	
	SPILLWAY Study: Risk Assessment - Overtopping and	10,963	22,070	11,593	-	-	7,664	15,430	8,105	-	-	3,299	6,641	3,488	-	-	43%
A763 PFD Refurb Paint Seal GV2 05-001424																	
	900 DIA B/FLY GUARD VALVE Refurbish: Patch paint and seal	19,219	-	-	-	-	10,159	-	-	-	-	9,060	-	-	-	-	89%
St George Water Supply		**22,668**	**5,940**	**15,600**	**-**	**-**	**15,984**	**4,189**	**11,000**	**-**	**-**	**6,683**	**1,751**	**4,600**	**-**	**-**	
07SGA06 BMD Spillway and Risk Assessment																	
	SPILLWAY BMD Risk Assessment - Overtopping and spillway	22,668	5,940	15,600	-	-	15,984	4,189	11,000	-	-	6,683	1,751	4,600	-	-	42%
Upper Burnett Water Supply		**39,530**	**11,377**	**-**	**-**	**-**	**23,756**	**6,837**	**-**	**-**	**-**	**15,775**	**4,540**	**-**	**-**	**-**	
06-1673 Wuruma Dam Spillway Risk Assess																	
	MAIN WALL Overall Spillway Risk Assessment	39,530	11,377	-	-	-	23,756	6,837	-	-	-	15,775	4,540	-	-	-	66%
Upper Condamine Water Supply		**-**	**119,990**	**-**	**-**	**-**	**-**	**62,001**	**-**	**-**	**-**	**-**	**57,989**	**-**	**-**	**-**	
IPS08UCO02 Enchancement: Replace guard v																	
	915 GUARD VALVE - R/H Replace gate valve with butterfly	-	119,990	-	-	-	-	31,001	-	-	-	-	57,989	-	-	-	94%
	915 GUARD VALVE - L/H Replace gate valve with butterfly valve	-	-	-	-	-	-	31,001	-	-	-	-	-	-	-	-	-
Grand Total		**589,631**	**661,438**	**1,081,979**	**1,386,851**	**245,527**	**353,278**	**365,228**	**529,149**	**279,519**	**33,129**	**236,353**	**296,210**	**552,830**	**1,107,332**	**212,398**	

Figure m.4 Results from Project Matching showing projects with above 30% exceedance ($ nominal with 4% indexation applied to forecast)

Asset Restoration Reserve Balances

The scope of the ARR balance analysis is derived from the Authority's TOR and involves two steps:

- Reviewing SunWater's proposed methodology for converting the 8 water supply scheme ARR balances into separate ARR balances for each bulk supply segment and distribution system; and
- Determining whether the application of SunWater proposed methodology generates an appropriate result and, if not, recommend adjusted opening balances for relevant scheme segments for 2012-13.

During the review, Indec identified other issues which may impact on ARR balances for all 30 service contract rather than the 16 service contracts subject to review under the scope of this analysis. This has resulted in the scope of the review extending to all 30 ARR balances to determine if SunWater's proposed methodology generates appropriate ARR balances. Section 4.7 outlines the issues identified by Indec during its review.

SunWater's Proposed Methodology

SunWater is proposing to unbundled or split the ARR balances based on a water supply scheme basis to a bulk supply and distribution basis for the following eight water supply schemes:

- Bundaberg
- Burdekin-Haughton
- Dawson Valley
- Eton
- Lower Mary
- Mareeba Dimbulah
- Nogoa Mackenzie (Emerald)
- St George

The ARR balances for each of the eight water supply schemes listed above have been split by SunWater into two balances representing bulk supply and distribution to enable unbundled tariffs to be calculated on a bulk supply and distribution basis. The ARR is a key input into the renewals annuity calculation which is a cost component in developing the revenue requirement to determine tariffs.

SunWater's proposed methodology has relied on a mix of detailed actual data for the period 2006 to 2011 and forward looking renewals expenditure data and has not included actual data spanning back from 2000 to 2006.

SunWater has noted that its proposed approach to unbundling of the ARR opening balances will not precisely reflect the actual unbundled balances that would have occurred if historical data was available from 2000. SunWater notes that the proposed approach may generate outcomes that are clearly erroneous or distort the renewals calculation. SunWater did find some anomalies and applied what seemed to be arbitrary adjustments of $800,000 to Dawson and $100,000 to Mareeba to ensure that the bulk water sectors of these schemes avoided a negative renewals annuity.

Review of SunWater's Proposed Methodology

The most appropriate approach to re-create the ARR balances based on a bulk supply and distribution basis, or unbundled basis, is to base the unbundling of the ARR balances on actual historical data which established the existing balances on a bundled basis. The existing ARR balances represent the historical sum of actual revenues received to fund renewals activities, actual expenditure on renewals activities and any interest incurred or earnt on the annual running balances.

On a principles basis, Indec does not support SunWater's proposed methodology as it does not include the full period of actual data from 2000 to 2011 to capture the actual revenues received and actual expenses incurred and the corresponding interest component which are the basis for the existing balances on a bundled basis. The inclusion of the 25 year forward looking data has the potential to introduce distortions and biases if the timing and magnitude of forecast expenditure does not closely resemble the timing and magnitude of revenue collection and asset expenditure which has occurred over the past 11 years to arrive at the current ARR balances. The outcomes observed for Mareeba and Dawson and the arbitrary adjustments made by SunWater provide anecdotal evidence that SunWater's proposed approach has some limitations and has introduced some anomalies.

Alternative Proposed Methodology

Indec's view is that the most appropriate methodology to unbundle the ARR balances would be to recreate the balances based on actual historical transactions from the inception of the ARR balances in 2000. This approach is also supported by SunWater.[1]

Indec identified some issues with the data which required some adjustments as outlined in Section 4.6. Indec indentified further issues which could not be resolved within the scope of the analysis as defined by the Authority's Terms of Reference (ToR) dated 2 June 2011. These issues are outlined further in Section 4.7 and have not enabled Indec to recommend appropriate ARR balances. The ARR balances presented in this report are therefore preliminary and indicative in nature and should not be relied upon to calculate renewals annuities for pricing purposes.

[1] SunWater Background Paper Renewals Annuity January 2010 p7

Section 4.8 provides more details on the methodology applied by Indec and Section 4.9 outlines the indicative and preliminary results of the analysis.

Data Issues

Indec identified a number of data issues during its analysis which has impacted on the analysis and some of these issues have prohibited Indec's from fully developing its recommend approach to generate more appropriate ARR balances. These issues are outlined below including any impacts on the analysis:

Indirect and Overhead Costs

Indec has completed its analysis on a direct cost basis as per the Authority's ToR and has therefore excluded any indirect and overhead costs allocated by SunWater to renewals activities.

For actual reporting purposes and for the calculation of the ARR balances, SunWater has allocated indirect and overhead costs to renewals activities. Indec believes that this may create anomalies as the allocation of indirect and overhead costs to actual renewals expenditure for the purposes of rolling forward the ARR has the potential to lead to adverse pricing outcomes.

Allocating actual indirect and overhead costs to renewals expenditure may result in the allocated indirect and overhead costs being recovered twice from customers. These indirect and overhead cost have been recovered via the tariffs set for the 2006-07 to 2010-11 irrigation price paths and potentially will be recovered for a second time in future price paths when rolled into the ARR balances. This situation may arise as the allocated indirect and overhead costs are captured in the ARR balance and consequently increase the level of the renewals annuity and irrigation tariffs for future price paths.

The Authority will need to give this issue further consideration and assess the likely impacts on the analysis and the ARR balances. Indec believes that adjustments are required to maintain the integrity of the ARR balances and to avoid any potential double recovery of costs.

Definition of direct, indirect and overhead costs

Any change in definition of a direct, indirect and overhead cost between the approach applied to prepare the forecasts and the current definitions applied by SunWater in reporting actual results is likely to have implications on the ARR balance. The scope of this review is based on direct costs only and Indec has not investigated this matter further to identify if any issues are likely to arise. Indec recommends to the Authority that further analysis and investigations is undertaken to understand if any changes in definitions of direct, indirect and overhead costs has occurred due to the introduction of the new reporting system and if so, if any changes impact on the ARR balances.

2005/06 budget estimate data

The data set provided by SunWater included budget forecast data for the 2005/06 year. Indec did make a request to SunWater for actual data and SunWater was unable to satisfy this request due

to the time and resources required to extract this data. This has required Indec to complete the analysis with forecast data for the 2005/06 year and the ARR balances generated by Indec's approach is preliminary and indicative in nature. This use of 2005/06 budget estimate data in Indec's analysis limits the ability to compare Indec's indicative results with the approach proposed by SunWater.

Interest on ARR Annuity Balance

Indec's analysis excludes the interest on the ARR balances as the data and balances provided by SunWater did not include interest on ARR balance and Indec did not have access to the SunWater Financial Model which undertakes this part of the calculation for the 2006-07 to 2010-11 period. Indec has noted from SunWater's Working Paper that SunWater has applied an interest rate of 9.689% (pre-tax nominal) for the 2006-07 to 2010-11 period which SunWater has stated is based on the rate applied to calculate the annuity.

Further investigations are required to identify the interest rate applied by SunWater to ARR balances over the 2000-01 to 2005-06 period.

Indicative and Preliminary ARR Balances

Figure m.5 below details the indicative and preliminary results of Indec's analysis and presents the closing ARR balance on an annual basis for each service contract on an unbundled basis on an irrigation only basis.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Bundaberg Irrigation Distribution	-132,415	19,750	-284,766	-505,491	-563,495	-777,462	-436,141	213,932	910,041	1,527,837	1,400,710
Burdekin Irrigation Distribution	309,569	-170,828	-245,192	-628,346	-987,269	-1,617,324	-921,319	-96,519	-785,807	-1,134,551	-2,133,585
Dawson Irrigation Distribution	-182,231	163,837	307,927	644,649	854,183	681,044	735,918	757,906	732,672	438,043	-186,575
Emerald Irrigation Distribution	-19,533	-167,352	-346,936	-916,252	-1,122,750	-1,135,755	-935,978	-753,927	-570,529	-977,290	-1,000,763
Eton Irrigation Distribution	-45,880	-100,372	-134,011	-189,958	-257,250	-469,740	-339,562	-207,293	-225,966	-494,182	-682,811
Lower Mary Irrigation Distribution	-8,210	-113,204	-180,025	-226,793	-252,131	-300,208	-216,799	-181,808	-177,149	-140,693	-149,720
Mareeba Irrigation Distribution	400,681	1,127,568	1,214,218	479,298	576,372	953,690	1,027,365	961,517	773,721	-572,167	-2,200,746
St George Irrigation Distribution	-4,048	-38,966	-171,121	-176,072	-271,084	-433,430	-372,763	-271,168	-348,410	-482,313	-2,092,988
Barker Barambah Water Supply	-32,003	-80,484	-64,196	-271,644	-364,884	-422,492	-395,240	-377,176	-321,098	-304,802	-450,390
Bowen Broken Water Supply	5,275	18,157	24,060	32,958	-153,870	-102,190	-99,745	-97,482	-98,028	-94,935	-95,484
Boyne Water Supply	2,085	8,572	137,412	175,097	98,857	154,570	173,120	200,888	221,833	250,813	261,979
Bundaberg Water Supply	100,503	281,995	428,414	607,188	681,725	932,168	1,108,635	1,207,977	1,150,036	1,074,013	663,285
Burdekin Water Supply	209,997	607,502	752,959	771,844	526,395	633,947	1,040,478	1,274,998	1,537,048	1,765,728	2,129,865
Callide Water Supply	-25,934	-67,194	-52,680	-317,306	-540,827	-531,626	-416,679	-318,047	-244,667	-170,555	-105,165
Chinchilla Weir Water Supply	20,034	30,529	58,786	53,756	53,086	81,113	83,887	85,652	68,309	65,287	65,175
Cunnamulla Weir Water Supply	1,300	2,661	4,676	-17,926	-27,447	-45,210	-31,534	-18,002	-23,317	-10,600	-2,173
Dawson Water Supply	115,219	443,957	787,255	1,122,142	1,436,329	1,826,659	1,816,837	1,830,889	1,861,882	1,894,542	1,850,882
Eton Water Supply	27,176	112,180	293,614	115,570	109,921	247,059	232,310	256,403	240,095	-3,607	-174,278
Lower Fitzroy Water Supply	-5,216	234,301	14,568	-72,064	-156,297	-187,658	-180,404	-172,792	-172,101	-163,247	-158,362
Lower Mary Water Supply	4,409	25,031	25,370	1,635	-21,766	-75,357	-28,943	54,580	116,486	164,249	212,279
Macintyre Brook Water Supply	55,584	126,850	226,759	255,911	264,496	358,356	374,937	61,838	-216,981	-640,335	-838,580
Maranoa Water Supply	1,123	2,623	4,200	-9,648	-19,079	-42,337	-35,222	-25,621	-15,820	-7,031	3,131
Mareeba Water Supply	351,934	405,402	870,617	1,260,474	1,693,960	2,258,557	2,447,824	2,676,052	2,913,936	3,203,458	3,400,960
Nogoa Water Supply	171,559	698,440	1,334,970	1,382,459	1,798,725	505,224	392,474	367,412	337,550	346,204	464,655
Pioneer Water Supply	159,884	-157,472	-155,184	-327,859	-288,672	-318,730	-227,141	-316,654	-336,710	-240,782	-349,449
Proserpine Water Supply	30,035	-16,288	12,984	54,149	14,704	13,149	15,569	25,245	19,255	50,457	55,162
St George Water Supply	261,141	290,190	652,507	1,010,523	1,373,232	1,682,529	1,489,818	1,514,909	1,623,716	1,556,922	1,497,663
Three Moon Water Supply	-108,202	-164,332	-138,511	-124,714	-365,079	-363,188	-270,481	-214,806	-155,845	-76,997	4,958
Upper Burnett Water Supply	1,629	80,794	140,250	125,265	11,841	105,323	210,074	328,306	453,952	471,819	215,963
Upper Condamine Water Supply	89,121	101,866	98,460	148,258	75,384	108,657	-42,438	-145,878	-62,061	-96,498	-258,982
Total	**1,754,586**	**3,705,713**	**5,617,385**	**4,457,104**	**4,177,309**	**3,719,337**	**6,198,858**	**8,621,332**	**9,206,042**	**7,198,788**	**1,346,617**

Figure m.5 Indicative & Preliminary Closing ARR Balances (Irrigation Only) ($ nominal)

A positive balance arises when the annuity balance is in surplus from the customer's perspective and a negative balance arises when the annuity balance is in deficit from the customer's perspective.

Appendix C contains indicative and preliminary ARR balances workings on a service contract basis.

Figure m.6 below details the indicative and preliminary results of Indec's analysis and presents the 2010/11 closing ARR balance on a total scheme basis. The total scheme basis balance is derived after applying the uplift factor as determined by SunWater and presented in its Working Paper.

	2011 Closing Balance, Irrigation Only	Uplift Factor	2011 Closing Balance, Total Scheme
Bundaberg Irrigation Distribution	1,400,710	1	1,400,710
Burdekin Irrigation Distribution	-2,133,585	1	-2,133,585
Dawson Irrigation Distribution	-186,575	1	-186,575
Emerald Irrigation Distribution	-1,000,763	1	-1,000,763
Eton Irrigation Distribution	-682,811	1	-682,811
Lower Mary Irrigation Distribution	-149,720	1	-149,720
Mareeba Irrigation Distribution	-2,200,746	1	-2,200,746
St George Irrigation Distribution	-2,092,988	1	-2,092,988
Barker Barambah Water Supply	-450,390	1.201	-540,807
Bowen Broken Water Supply	-95,484	11.535	-1,101,372
Boyne Water Supply	261,979	1.951	511,167
Bundaberg Water Supply	663,285	1.365	905,151
Burdekin Water Supply	2,129,865	2.711	5,773,979
Callide Water Supply	-105,165	1.796	-188,924
Chinchilla Weir Water Supply	65,175	1.807	117,768
Cunnamulla Weir Water Supply	-2,173	1.047	-2,275
Dawson Water Supply	1,850,882	1.104	2,043,411
Eton Water Supply	-174,278	1.261	-219,717
Lower Fitzroy Water Supply	-158,362	13.340	-2,112,554
Lower Mary Water Supply	212,279	1.678	356,175
Macintyre Brook Water Supply	-838,580	1.075	-901,136
Maranoa Water Supply	3,131	1.019	3,190
Mareeba Water Supply	3,400,960	1.318	4,481,244
Nogoa Water Supply	464,655	1.774	824,230
Pioneer Water Supply	-349,449	1.649	-576,347
Proserpine Water Supply	55,162	1.974	108,892
St George Water Supply	1,497,663	1.199	1,795,409
Three Moon Water Supply	4,958	1.151	5,706
Upper Burnett Water Supply	215,963	1.132	244,554
Upper Condamine Water Supply	-258,982	1.336	-346,096
Total	**1,346,617**		**4,135,170**

Figure m.6 Preliminary & Indicative Closing ARR Balances 2010/11 ($ nominal) (Total Scheme)

1. INTRODUCTION

Indec Consulting has been engaged by the Authority to complete an analysis of SunWater's 2006-07 to 2010-11 renewals expenditure forecasts prepared as part of the 2006-07 to 2010-11 irrigation price paths.

For each SunWater service contract, Indec undertook an analysis of SunWater's 2006-07 to 2010-11 renewals expenditure to deliver the following outcomes:

(i) provide an electronic file of SunWater's forecast renewals annuities for 2006-07 to 2010-11 on a project by project basis excluding overheads;

(ii) compare previously forecast renewals expenditures from 2006-07 to 2010-11 excluding overheads with:

- actual expenditure over that period excluding overheads;
- an adjusted renewals forecast based on an index to be advised by the Authority before the commencement of the consultancy;
- an adjusted renewals forecast based on SunWater's approach proposed for the next price path; and
- an adjusted renewals forecast based on actual ABS annual rates of inflation for the period;

(iii) identify for those service contracts where actual costs have exceeded forecast costs by 30% over the indexed estimated costs for each irrigation service contract;

(iv) for those service contracts identified in (iii) above, identify projects the cost of which exceeds 5% of actual total annual renewals costs;

(v) review SunWater's proposed methodology for converting the 22 scheme Asset Restoration Reserve (ARR) balances into separate ARR balances for each distribution system and bulk segment; and

(vi) determine whether the application of the methodology adopted by SunWater in (v) above generates an appropriate result and, if not, recommend adjusted opening balances for relevant scheme segments for 2012-13.

For (ii), identify and adjust for unplanned expenditure during that period (details to be sought from and provided by SunWater) and for any expenditure deemed not to be prudent by the Authority.

This report delivers on the outcomes relating to concurrent activity 4 (c) as outlined in the Authority's Terms of Reference (ToR) dated 2 June 2010 titled *Part (B) Review of SunWater Pricing Model – Component 2: and Other Concurrent Activities* (see Appendix A).

1.1. QCA's Role

The Authority is an independent pricing and access regulator responsible for ensuring that specified monopoly infrastructure-based services in Queensland comply with the principles of national competition policy. The Authority seeks to provide a recognised avenue whereby both government and third parties can rely on an independent, objective appraisal of the issues subject to its review. The Authority was established by the *Queensland Competition Authority Act 1997* (the Act).

On the 19th March 2010, the Premier and Treasurer of Queensland, pursuant to Section 23 of the Act, have directed that the Authority develop and recommend irrigation prices to apply for particular SunWater water supply schemes from 1 July 2011 to 30 June 2016 (the Ministers' Referral Notice). The Ministers' Referral Notice has specified certain matters that the Authority must take into consideration and the Authority may exercise all the powers under Part 6 of the Act.

On the 17th December 2010, the Premier and Treasurer of Queensland amended the Direction of 19th March 2010 to restate the matters the Authority must take into consideration including modifying the timing of the price path commencing 1 October 2011 and ending 30 June 2016 (the Amended Ministers' Referral Notice).

On the 3rd June 2011, the Treasurer and Minister for Finance and the Arts of Queensland amended the Direction of 17th December 2010 to change the timing of the price path period from 1 July 2012 to 30 June 2017 and to provide further direction on the treatment of costs associated with the achievement of the national non-urban metering framework.

1.2. SunWater Background

As a Queensland Government-owned Corporation (GOC), SunWater provides a range of services including infrastructure ownership, water delivery, operation and maintenance of infrastructure and engineering consultancy services. SunWater is the single largest service provider in the State providing retail and bulk supply services to industrial, agricultural and rural and urban users.

Over the last 80 years, SunWater has developed and now operates a regional network of water supply infrastructure throughout Queensland which supports irrigated agriculture, mining, power generation, industrial and urban development through 22 Water Supply Schemes. SunWater's water storage and infrastructure includes 19 major dams and over 2,500 kilometres of pipelines.

1.3. SunWater Forecast Renewals Expenditure 2006-07 to 2010-11

Indec's analysis contained within this report is based on the forecasts prepared by SunWater during the negotiation process with customer representatives to set the 2006-07 to 2010-11 irrigation price paths. The outcomes of this negotiation process, including the forecast total costs for the period 2006-07 to 2010-11 or the lower bound cost targets, were documented in the report titled *SunWater Irrigation Price Paths 2006/07 - 2010/11 Final Report*. The forecasts renewals expenditure data was extracted from the Irrigation Pricing Model developed by SunWater to establish the 2006-07 to 2010-11 irrigation price paths, which is further detailed in Section 2.3.

The analysis within this report considered the SunWater business restructure which occurred in 2006 and the data collection restructure which occurred in 2007. This required Indec to restructure the 2006-07 to 2010-11 forecast data based on a water supply scheme basis to match the current data reporting structures based on a service contract format. The restructuring and data mapping of the forecast data, including some of the issues that arose, is further explained in Section 2.5.

1.4. SunWater Actual Renewals Expenditure 2006-07 to 2010-11

Indec has relied upon the actual cost data for the period 2006-07 to 2010-11 provided by SunWater to produce the comparison outputs contained in this report. SunWater assisted with further information to enable Indec to verify the analysis and the subsequent data mapping required to enable a reliable and consistent comparison and analysis of actual results against the forecasts. Section 2.2 of the report outlines in more detail the data mapping undertaken to complete the analysis and the associated issues.

2. 2006-07 TO 2010-11 FORECAST RENEWALS EXPENDITURE

This section of the report explains the general methodology applied by Indec in undertaking the analysis and comparison of forecast renewals expenditure to actual renewals expenditure over the period 2006-07 to 2010-11. This section also outlines some of the issues with the forecast and actual cost data, the adjustments made to the forecast and actual cost data and the limitations of the analysis and the comparison of forecast costs to actual costs.

2.1. Forecast Renewals Expenditure Data Issues

Indec's first step was to review the data structures applied in the establishment of the forecast renewals expenditure data set originally applied to develop the 2006-07 to 2010-11 irrigation price paths. The next step involved reviewing the recording of actual financial results by SunWater over the course of the five year price path period.

Indec is familiar with both the forecast and actual financial data sets from its experience with the previous irrigation price review and the current review when completing, on behalf of the Authority, a review of SunWater's Financial Model, an audit of the BOM and other concurrent activities related to the 20012-13 to 2016-17 irrigation price paths.

To enable a comparison of actual financial results with those forecast as part of the 2006-07 to 2010-11 irrigation price paths, certain adjustments were required to deal with business restructuring, both internally and externally driven, and a change in the data structure applied in the recording of actual financial results. The following events, which occurred during the 2006-07 to 2010-11 irrigation price paths, have impacted on the analysis:

- SunWater's implementation of the BOM in 2007 has altered the financial data structure with the key impacts resulting in modified cost recording and the introduction of the service contract concept so that the eight schemes with distribution networks can be separated from bulk supply to enable tariff unbundling so that a separate tariff can be calculated for bulk supply (river) and distribution services. This unbundling has also impacted on the ARR balance, which has required this water supply scheme based balance to be unbundled and accounted for at the bulk supply and distribution level. Section 4 of this report provides further details and analysis relating to the ARR impacts.
- The introduction of the BOM has resulted in certain non-irrigation segments of schemes, such as town water and industrial pipelines, being captured as independent service contracts and effectively excluded from the analysis.
- At the start of 2008/09, five water supply schemes (seven service contracts) were transferred to Seqwater as part of the Queensland Government's reforms of the water industry. These five schemes included Central Lockyer Valley, Lower Lockyer Valley, Logan River, Upper Mary and Warill Valley Water Supply Schemes and are excluded from this analysis.

- SunWater's business restructure in 2006 has had broad impacts on the cost analysis as costs are now incurred by different operating units than what was originally forecast. The number of business centres has reduced, the number of depots has increased and some of the functions have moved to a different operating unit. SunWater has advised Indec that a significant level of business centres activities have been transferred to the Brisbane office.
- Indec has been advised by SunWater that a stronger emphasis is placed on recording direct or discrete activities performed in the Brisbane office on a particular service contract as either a direct or indirect cost for the relevant service contract. This outcome results from both a change in time charging practices, the introduction of multiple indirect cost pools as well as the shift of activities from regional offices to the Brisbane office.
- The allocation of overheads has been modified to that applied in the setting of the 2006-07 to 2010-11 irrigation price paths in terms of methodology as well as the introduction of further indirect cost pools referred to earlier. The ToR involves conducting the analysis on a direct costs basis excluding overheads which excludes this issue from the scope of the analysis.

These changes and their impacts on the analysis of forecast costs versus actual costs are outlined in more detail in the remainder of Section 2.

2.2. Comparison on a Direct Cost Basis

The scope of this review was based on a direct costs basis excluding overheads. Consequently, Indec was not required to consider the impacts associated with the change in SunWater's indirect and overhead cost allocation methodology with no adjustments made to the forecast cost data to broadly replicate the current indirect and overhead cost allocation methodology. For the purposes of this report, Indec has prepared the analysis on the basis that all indirect and overhead costs are assumed to be non-direct costs and are excluded from actual renewals expenditure for comparative purposes.

The forecast renewals expenditure data for the 2006-07 to 2010-11 period was prepared on a direct cost basis with no indirect cost allocated to renewals expenditure by the Irrigation Pricing Model. The terminology used during the 2006-07 to 2010-11 irrigation price path involved direct and indirect costs. The *Tier 1 Working Paper No.2 Glossary of Terms and Definitions* included the following definitions of direct and indirect costs:

> *Direct cost is a costs of operation and management which can be readily assigned to a specific Water Supply Scheme (e.g. Operating Costs, Maintenance Costs and Refurbishments).*
>
> *Indirect cost is a business costs which cannot be readily assigned to a specific Water Supply Scheme. Often described as Overheads, Indirect Costs do not relate directly to the operation and management of a particular Water Supply Scheme but are derived from activities which benefit a collection of all or some Water Supply Schemes (e.g. finance and strategic management functions).*

Some SunWater indirect costs may have been included in the direct renewals forecasts for those activities undertaken by the Engineering Services group of SunWater (now called Infrastructure Development). The forecast data available to Indec does not include details on the activities delivered by Engineering Services. Indec has raised this issue with SunWater and has sought further clarification and details on the forecast data to identify the extent of any SunWater indirect costs included in the forecast renewals expenditure which relates to Engineering Services activities. SunWater has yet to provide Indec with any detailed information to assist with the analysis.

SunWater has advised Indec that due to the introduction of BOM and the associated changes in the financial data structure including the definition of direct, indirect and overhead costs, the comparison of direct costs from the forecast renewals expenditure to the direct costs of actual renewals expenditure may not be based on an equivalent basis.

Sunwater's Network Service Plans provide the following definitions of indirect and overhead costs:

> *Indirect are costs of activities, resources and assets supporting direct activities. Indirect costs include activities such as asset management, water accounting, customer support, irrigation pricing, hydrographic services and so on.*
>
> *Overheads are support costs where no direct or indirect casual relationship with direct activities can be established. Overheads comprise residual administrative and corporate costs such as finance, human resources, information technology, legal services, corporate governance, internal audit, workplace health & safety, environmental management, procurement, corporate reporting, quality assurance, staff training, light vehicles, office accommodation and depots.*

Indec has discussed this issue with SunWater to understand the extent of the changes in definition of direct cost, indirect cost and overhead and to identify the impacts on the analysis undertaken in this report. SunWater has yet to provide Indec with detailed information to identify any impacts on the analysis.

Any change in definition of a direct, indirect and overhead cost between the approach applied to prepare the forecasts and the current definitions applied by SunWater in reporting actual results is likely to have implications on the ARR balance. In the calculation of the 2006-07 to 2010-11 irrigation price paths, indirect costs applicable to water supply schemes were fully allocated to forecast operating costs only and not allocated to forecast renewals expenditure. Given this, the allocation of indirect and overhead costs to actual renewals expenditure for the purposes of rolling forward the ARR has the potential to lead to adverse pricing outcomes.

Allocating actual indirect and overhead costs to renewals expenditure may result in the allocated indirect and overhead costs being recovered twice from customers. These cost are likely to have been recovered via the tariffs set for the 2006-07 to 2010-11 irrigation price paths and potentially will be recovered for a second time in future price paths.

This situation may arise as the allocated indirect and overhead costs are captured in the ARR balance and consequently increase the level of the renewals annuity and irrigation tariffs for future price paths.

A more detailed understanding is required of the definition of direct, indirect and overheads costs applied in the development of the forecasts compared to the current definitions to quantity the impacts of any differences. This information will provide an understanding of the adjustments required and the impacts on the analysis in this report and the roll forward of the ARR balances.

The Authority will need to give this issue further consideration and assess the likely impacts on the analysis and the ARR balances. If material differences arise due to the change in the definition of direct, indirect and overhead costs between the development of forecasts and the current practices, Indec would recommend that adjustments are required to maintain the integrity of the ARR balances and to avoid any potential double recovery of costs.

2.3. Source of Forecast Renewals Expenditure Data

The forecast renewals expenditure data was extracted from the following Excel files prepared by SunWater as part of the 2006-07 to 2010-11 irrigation price path:

- *Pivot and Allocation Beta 2 v33 v9.xls*
- *Refurb Program Reconciliation.xls*

The *Pivot and Allocation Beta 2 v33 v9.xls* file contains disaggregated cost forecasts and undertakes some of the calculations associated with the irrigation price path such as the allocation of overheads and the annuity.

The *Refurb Program Reconciliation.xls* file contains the cost forecasts at the project level for refurbishment and augmentation activities.

2.4. Indec Efficiency Savings

The lower bound cost targets as set by the price negotiation process included annual Indec efficiency savings targets at the total water supply scheme level. These targets have been included in the renewals expenditure forecast data for the purposes of this analysis and have been applied consistent with the approach applied by Indec in developing the recommended annual targets.

The recommended savings involved an annual efficiency target applicable to renewals expenditure for each water supply scheme. The annual recommended efficiency targets for each water scheme has been applied to the applicable service contract and adjusted to take into consideration any sections of the water supply scheme no longer part of the service contract applicable to irrigation services such as pipelines and town water.

Indec did not recommend how the savings should be achieved, rather it provided a guide rather than a prescriptive direction. Indec stated in its recommendations that the final distribution of savings among individual cost centres and activities should be at the absolute discretion of SunWater.

The allocation of Indec efficiency savings based on a service contract structure has not diminished the total annual savings targets to be achieved at the total water supply scheme level. As some segments from the water supply scheme structure are now captured in a separate service contract, the costs as well as the savings associated with the separate service contract are excluded from this analysis. As this analysis does not capture all service contracts and focuses on only those service contracts relevant to irrigation services, the total value of the Indec efficiency targets are not relevant to this analysis as some of the service contracts are excluded from this analysis.

It should be noted that a direct comparison of forecast renewal expenditure with actual renewal expenditure is likely to include variances which arise from SunWater adopting a different approach to implementing any Indec efficiency savings.

2.5. Adjustments to Forecast Renewals Expenditure

As outlined above, Indec adjusted the forecast renewals expenditure data prepared as part of the 2006-07 to 2010-11 irrigation price paths to more closely match the current business structure and the current practices of financial data capture.

With the exception of the indirect and overhead cost allocation change, these events and their impacts on data capture and reporting of actual outcomes have required changes to be made to the forecast data to enable a like for like comparison with actual financial results.

The changes outlined in Section 2.1 required Indec to make the following adjustments:

1. The service contract structure required forecast data based on water supply scheme basis to be mapped to the new data structure based on the service contract concept. This adjustment was effected by mapping the forecast data to the actual data on what was called segments and is now called profit centres. This adjustment effectively recast the forecast data prepared on a scheme basis to forecasts based on a service contract basis. The most significant changes involved the creation of the bulk supply and distribution service contracts for the eight channel systems and the adjustments associated with the creation of service contracts for commercial pipelines and urban or town water.

2. Indec was required to map the sub-activity cost structure which was the basis of the forecast renewals expenditure data to the current BOM cost activity level. This enabled the forecast renewals project data to be matched with actual renewals project data to enable a more consistent comparison of forecast costs to actual costs.

Indec cross checked the adjustments it made to the forecast data with a separate process undertaken by SunWater. SunWater provided Indec with a file titled *Extract Target LBC Data Conversion down to sub activity.xls*, which included annual forecast for service contract on a sub-activity basis.

This enabled Indec to undertake high level cross checks of the adjustments made by Indec to those of SunWater with some variances identified for certain service contracts. The timeframes associated with delivering the Draft Report did not permit for further detailed data to be requested from SunWater to conduct more detailed checking. Indec was unable to substantiate the reasons for the variances and whether they are related to definitional changes to direct and indirect costs or the application of Indec efficiency savings or for some other reason.

2.6. Source of Actual Renewals Expenditure Data

SunWater provided Indec with a data file which contained the actual annual cost data for the five year period ending 2011 on 22nd September 2011. The data file was an extract from SAP titled *Extract LBC Data Conversion down to sub activity level with 2011 and incl Seqwater SCs.xls*.

This actual cost data included the 37 service contracts relevant to irrigation services including the 7 service contracts transferred to Seqwater.

The timeframes associated with Indec's analysis and the timing of data availability from SunWater and the volumes of data involved has limited Indec's ability to conduct detailed analysis of the actual data.

2.7. Limitations of the Analysis

As previously noted in this report, the changes made by SunWater to its business structure and the implementation of BOM has an impact on the reliability and relevance of a line by line comparison of actual costs to forecast costs. Indec's adjustments to the forecast data has overcome most of the issues associated with the changes made by SunWater to its business structure and the implementation of BOM.

For the purposes of this report, Indec has prepared the analysis on the basis that all indirect and overhead costs are excluded from actual renewals expenditure for comparative purposes.

As outlined in Section 2.2, the introduction of BOM and the associated changes in the financial data structure including the definition of direct, indirect and overhead costs, is likely to impact on the comparison of forecast renewals expenditure to actual renewals expenditure as this

comparison may not be based on an equivalent definition of relevant costs. Indec has discussed this issue with SunWater to understand the extent of the changes in definition of direct cost, indirect cost and overhead and the impacts this will have on the analysis undertaken in this report.

As the scope of this review did not require Indec to consider the impacts associated with the change in SunWater's overhead allocation methodology, no adjustments have been made to the forecast cost data to either restate the allocation of overhead costs in the forecast data to broadly replicate the existing overhead allocation methodology applied to actual data to enable a more direct comparison of forecast cost with actual costs.

As outlined in Section 2.5, a further limitation involves the limited ability to identify the variances between Indec adjusted forecast data compared to a separate adjustment process undertaken by SunWater. The timeframes associated with delivering the Draft Report did not permit for further detailed data to be requested from SunWater to conduct more detailed checking.

Furthermore, a direct comparison of forecast costs and actual costs at the activity level is likely to include variances resulting from SunWater adopting a different approach to implementing any Indec efficiency savings to that implied by the adjustments made to the forecast data to capture Indec's methodology to develop the efficiency targets.

3. COMPARISON OF FORECAST PROJECT COSTS TO ACTUAL PROJECT COSTS 2006-07 TO 2010-11

This section of the report explains the outputs of the analysis relating to the comparison of forecast project costs to actual project costs over the period 2006-07 to 2010-11 based on the three alternative methods of indexing the forecast costs. The analysis in this section includes the results of identifying the material projects based on the Authority's materiality threshold and highlighting those projects which have exceeded forecast costs by 30% over the indexed forecast cost for each service contract.

3.1. Issues Impacting on Analysis and Interpretations

The analysis and the interpretation of the results in this report need to consider the issues associated with the potential change in definition of direct cost and the treatment of the efficiency savings.

Section 2.2 outlined the potential impacts on the comparison resulting from the introduction of BOM and the associated changes in the financial data structure. The potential impacts arise due to the change in definition of direct, indirect and overhead costs, consequently the comparison of direct costs from the forecast renewals expenditure to the direct costs of actual renewals expenditure may not be based on an equivalent basis. Indec has discussed this issue with SunWater to understand the extent of the changes in definition of direct cost, indirect cost and overhead and the impacts this will have on the analysis undertaken in this report.

For the purposes of this report, Indec has prepared the analysis on the basis that all indirect and overhead costs are excluded from actual renewals expenditure for comparative purposes.

As explained in Section 2.4 of this report, a direct comparison of forecast costs and actual costs at the activity level will include variances resulting from SunWater adopting a different approach to implementing any Indec efficiency savings to that implied by the adjustments made to the forecast data based on Indec's methodology to develop the efficiency targets.

3.2. Electronic File of 2006-07 to 2010-11 Forecast Costs

The first output as part of the analysis of SunWater's Forecast Total Costs 2006-07 to 2010-11 was to provide the Authority with an electronic file containing relevant details of SunWater's total forecast renewals expenditure, including efficiency gains (proposed by the Tier 1 Group) and the annual rate of cost escalation applied to the period 2006-07 to 2010-11.

Indec provided the Authority with an electronic file containing the forecast renewals expenditure at a project level which formed the basis of the 2006-07 to 2010-11 irrigation price paths, including the efficiency gains as agreed during the price negotiations with the Tier 1 Group to set the 2006-07 to 2010-11 irrigation price paths.

The 2006-07 to 2010-11 renewals forecasts were based in 2005/06 dollars and did not include any annual rate of cost escalations.

An electronic file was sent to the Authority on the 14th July 2011 with updated files sent on 6th and 13th September 2011, with each file including brief explanatory notes highlighting the key matters pertinent to the data contained in each file.

The names of the files sent to the Authority are detailed below:

- *V1122 Refurbishment & Augmentation Cash Spend Details QCA 20110714.xlsx*
- *V1122 Refurbishment & Augmentation Cash Spend Details QCA 20110906.xlsx*
- *V1122 Refurbishment & Augmentation Cash Spend Details QCA 20110913.xlsx*

A further set of files was sent to the Authority on 19th September 2011, including a comparison of forecast expenditure with actual expenditure including and excluding indirect and overhead costs.

The names of the files sent to the Authority are detailed below:

- *V1122 Refurbishment & Augmentation Cash Spend Details QCA 19sep2011(overheads excluded).xlsx*
- *V1122 Refurbishment & Augmentation Cash Spend Details QCA 19sep2011(overheads included).xlsx*

These files contained data extracted by Indec from the following two files:

- *Pivot and Allocation Beta 2 v33 v9.xls* file contains disaggregated cost forecasts and undertakes some of the calculations associated with the irrigation price path such as the allocation of overheads and the annuity.
- *The Refurb Program Reconciliation.xls* file contains the cost forecasts at the project level for refurbishment and augmentation activities.

3.3. High Level Analysis of Actual Renewals Expenditure

SunWater has advised Indec that the renewals expenditure over the 2006-07 to 2010-11 period has been influenced by a number of factors resulting in actual costs above forecast. Significant spending on new programs which were not included in the forecasts such as the Intersafe program and the public safety initiative have contributed significantly to expenditure above forecasts. Other influences have involved significant unit cost and latent condition variations on major projects such as the Whetstone Weir project in the Macintyre Brook Service Contract. SunWater also advised that significant expenditure has also arisen as a result of flood events in 2009 and 2010.

Figure 3.3.1 below shows a high level summary of the actual direct renewals expenditure by activity which assists in identifying the magnitude of actual expenditure by activity type. SunWater has cautioned Indec that the data relating to the 2007 year has some anomalies in terms of cost classifications and for this reason Indec has placed a lower reliance level on interpreting results for the 2007 year.

Activity Code	Activity Description	Sub Activity Description	2007	2008	2009	2010	2011
01-03	Operations	Enviro Mgt	9,382	-	-	-	-
01-07	Operations	Dam Safety	70,838	-	363,734	67,261	10,139
03-01	Corrective	Sched Corr Maint	-	-	2,380,490	320,889	3,920,319
04-01	Refurbishment & Enhancement	R&E	4,854,986	5,283,196	6,259,941	8,527,589	4,021,179
04-02	Refurbishment & Enhancement	Rec Fac	20,055	-	-	-	-
04-04	Refurbishment & Enhancement	R&E Treatment	139,172	3,082	-	-	-
04-08	Refurbishment & Enhancement	R&E Enhance	573,457	386,969	29,307	8,713	-
04-50	Refurbishment & Enhancement	Intersafe	-	-	-	4,798,876	7,594,730
	Other		9,737	-	-	-	-
Total			**5,677,628**	**5,673,248**	**9,033,472**	**13,723,327**	**15,546,366**

Figure 3.3.1 Analysis of Actual Direct Renewals Expenditure by Activity ($ nominal)

Figure 3.3.1 shows that actual non-routine expenditure relating to operations and corrective maintenance activities have been classified as renewals expenditure. Indec's high level analysis of this data post 2007 is indicating that the actual expenditure recorded against operating activities relates to the Bedford Weir incident and the corrective maintenance expenditure relates to flood damage repairs with significant flooding events arising in 2009 and 2011.

Figure 3.3.1 shows that the overall trend has involved an increase in the total expenditure over the five year period, from $5.7m in 2007 to $15.5m in 2011. Expenditure has been predominately related to Activity Code 04-01 for all years except 2011. Activity Code 04-01 represents a general category of refurbishment and enhancement related activities. In the 2011 year, the spending was predominantly associated with the Intersafe project (Activity Code 04-50), with significant expenditure associated with flood damage repairs (Activity Code 03-01) and a significant reduction in Activity Code 04-01 expenditure.

3.4. Cost Indexation

The forecast cost data prepared as part of the 2006-07 to 2010-11 irrigation price paths are based in 2005/06 real dollars and did not include any cost indexation to express the forecasts in nominal dollars or dollars of the day.

The terms of reference required Indec to apply three different cost indexations to the forecasts before undertaking the comparison against actual project costs. Each of the three approaches is discussed below including the outcomes of the comparisons.

3.4.1. Cost Index advised by Authority

For the comparisons of actual against adjusted forecasts based on the Authority's preferred cost index, Indec has applied an annual 4% cost indexation based on advice received from the Authority. Indec understands that the Authority's preferred cost escalation index of 4% is based on the average of the Queensland Roads and Bridges Construction Index and the Queensland Engineering Construction Activity Implicit Price Deflator for the 2006-7 to 2010-11 period.

As discussed in Section 2.4, the forecasts below include an adjustment for the Indec Efficiency Savings which formed part of the 2006-07 to 2010-11 irrigation price paths. The efficiency savings have been applied in a manner consistent with the methodology applied by Indec in developing the recommended efficiency savings over the five year period.

Figure 3.4.1 below details the results of the comparison of the adjusted forecast renewals expenditure based on the Authority's preferred cost index to the actual renewals expenditure over the five year period 2006/07 to 2010/11 on a service contract basis.

	Actual, Nominal $					Forecast (IPM), Nominal $ (4% Indexation, Indec Efficiency Saving)				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Bundaberg Irrigation Distribution	992,148	655,900	665,233	946,883	1,560,223	868,506	720,336	529,157	855,057	1,099,041
Burdekin Irrigation Distribution	864,964	662,841	2,493,600	2,361,062	2,631,903	1,717,249	1,413,853	2,683,790	2,939,209	2,176,648
Dawson Irrigation Distribution	0	42,957	113,630	466,652	894,077	85,363	156,307	113,726	201,392	195,981
Emerald Irrigation Distribution	101,050	147,285	580,863	1,640,511	689,707	139,670	189,877	138,134	108,913	245,209
Eton Irrigation Distribution	17,926	31,897	231,540	613,198	499,761	50,002	9,750	74,793	80,060	118,813
Lower Mary Irrigation Distribution	43,085	70,244	132,076	108,239	141,079	66,033	160,178	192,398	139,650	58,853
Mareeba Irrigation Distribution	739,374	895,029	1,063,945	2,350,970	2,604,135	1,061,291	1,164,362	1,229,037	863,598	1,023,585
St George Irrigation Distribution	55,666	22,262	204,908	281,089	1,790,558	96,510	82,668	377,006	449,373	52,506
Barker Barambah Water Supply	74,358	86,304	54,223	83,523	266,714	183,612	102,034	89,124	62,887	100,096
Bowen Broken Water Supply	7,363	46,234	350,452	181,168	343,420	86,952	-2,583	76,138	114,158	62,991
Boyne Water Supply	46,671	5,009	133,655	36,661	115,598	73,695	69,795	179,393	237,948	83,712
Bundaberg Water Supply	96,253	171,175	365,331	416,082	725,424	384,904	422,522	332,717	336,940	270,912
Burdekin Water Supply	179,870	259,748	254,656	315,099	128,561	79,240	124,003	66,784	7,187	92,318
Callide Water Supply	26,832	41,215	73,405	73,789	80,731	98,532	243,863	226,002	262,665	171,540
Chinchilla Weir Water Supply	0	2,309	38,196	12,503	4,911	6,095	39,268	3,231	3,325	0
Cunnamulla Weir Water Supply	720	0	20,056	0	3,180	0	0	0	0	23,080
Dawson Water Supply	117,799	76,557	79,944	78,279	180,976	116,307	61,035	46,164	216,049	212,209
Eton Water Supply	233,706	170,552	204,665	345,417	259,063	205,458	83,738	108,688	38,792	141,608
Lower Fitzroy Water Supply	7,516	2,782	57,975	15,844	81,339	0	10,334	0	27,708	53,083
Lower Mary Water Supply	40,216	14,966	16,671	56,888	18,143	47,593	14,310	-14,167	-14,577	19,442
Macintyre Brook Water Supply	125,837	482,351	665,801	595,423	348,586	198,099	795,914	164,265	134,108	133,861
Maranoa Water Supply	2,352	0	0	1,184	0	0	0	0	0	28,849
Mareeba Water Supply	55,327	20,158	45,890	18,699	93,963	121,188	229,191	63,868	50,199	357,043
Nogoa Water Supply	812,458	572,685	322,967	595,089	361,209	74,160	343,628	342,537	536,647	161,557
Pioneer Water Supply	100,954	487,511	482,308	1,413,776	505,805	226,036	133,391	96,945	59,850	169,635
Proserpine Water Supply	50,237	41,027	72,498	9,348	40,080	54,267	44,866	27,810	59,205	88,762
St George Water Supply	392,427	172,765	116,422	283,836	266,888	335,245	484,805	178,809	166,250	248,105
Three Moon Water Supply	-1,494	36,894	34,429	13,045	2,906	45,715	50,957	52,191	66,500	126,938
Upper Burnett Water Supply	138,223	125,252	70,337	242,301	521,623	210,588	274,719	138,793	231,476	178,053
Upper Condamine Water Supply	355,790	329,339	87,797	166,768	385,803	424,137	304,327	269,364	264,891	140,549
Total	**5,677,628**	**5,673,248**	**9,033,472**	**13,723,327**	**15,546,366**	**7,056,449**	**7,727,446**	**7,786,700**	**8,499,462**	**7,834,977**

Figure 3.4.1 Analysis of Actual Direct Renewals Expenditure by Activity based on Authority's preferred cost index ($ nominal)

Figure 3.4.2 below shows the absolute and relative variances when comparing actual renewals expenditure against the adjusted forecast renewals expenditure based on the Authority's preferred cost index.

	$ Variance					% Variance				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Bundaberg Irrigation Distribution	123,642	-64,435	136,075	91,826	461,182	14%	-9%	26%	11%	42%
Burdekin Irrigation Distribution	-852,285	-751,013	-190,190	-578,147	455,255	-50%	-53%	-7%	-20%	21%
Dawson Irrigation Distribution	-85,363	-113,350	-96	265,259	698,096	-100%	-73%	-0%	132%	356%
Emerald Irrigation Distribution	-38,620	-42,592	442,728	1,531,599	444,499	-28%	-22%	321%	1406%	181%
Eton Irrigation Distribution	-32,076	22,148	156,747	533,138	380,949	-64%	227%	210%	666%	321%
Lower Mary Irrigation Distribution	-22,948	-89,934	-60,322	-31,410	82,226	-35%	-56%	-31%	-22%	140%
Mareeba Irrigation Distribution	-321,917	-269,333	-165,092	1,487,372	1,580,550	-30%	-23%	-13%	172%	154%
St George Irrigation Distribution	-40,844	-60,407	-172,099	-168,284	1,738,052	-42%	-73%	-46%	-37%	3310%
Barker Barambah Water Supply	-109,254	-15,730	-34,902	20,636	166,618	-60%	-15%	-39%	33%	166%
Bowen Broken Water Supply	-79,589	48,817	274,314	67,010	280,429	-92%	-1890%	360%	59%	445%
Boyne Water Supply	-27,024	-64,786	-45,737	-201,287	31,886	-37%	-93%	-25%	-85%	38%
Bundaberg Water Supply	-288,651	-251,347	32,615	79,142	454,512	-75%	-59%	10%	23%	168%
Burdekin Water Supply	100,630	135,745	187,872	307,912	36,243	127%	109%	281%	4284%	39%
Callide Water Supply	-71,701	-202,648	-152,597	-188,876	-90,809	-73%	-83%	-68%	-72%	-53%
Chinchilla Weir Water Supply	-6,095	-36,959	34,965	9,178	4,911	-100%	-94%	1082%	276%	No Forecast
Cunnamulla Weir Water Supply	720	0	20,056	0	-19,900	No Forecast	No Forecast	No Forecast	No Forecast	-86%
Dawson Water Supply	1,492	15,522	33,780	-137,770	-31,233	1%	25%	73%	-64%	-15%
Eton Water Supply	28,248	86,814	95,976	306,626	117,455	14%	104%	88%	790%	83%
Lower Fitzroy Water Supply	7,516	-7,551	57,975	-11,865	28,257	No Forecast	-73%	No Forecast	-43%	53%
Lower Mary Water Supply	-7,376	656	30,838	71,465	-1,300	-15%	5%	-218%	-490%	-7%
Macintyre Brook Water Supply	-72,262	-313,563	501,536	461,314	214,725	-36%	-39%	305%	344%	160%
Maranoa Water Supply	2,352	0	0	1,184	-28,849	No Forecast	No Forecast	No Forecast	No Forecast	-100%
Mareeba Water Supply	-65,861	-209,033	-17,978	-31,500	-263,080	-54%	-91%	-28%	-63%	-74%
Nogoa Water Supply	738,298	229,057	-19,570	58,442	199,652	996%	67%	-6%	11%	124%
Pioneer Water Supply	-125,082	354,119	385,363	1,353,926	336,171	-55%	265%	398%	2262%	198%
Proserpine Water Supply	-4,030	-3,839	44,688	-49,857	-48,682	-7%	-9%	161%	-84%	-55%
St George Water Supply	57,183	-312,041	-62,387	117,586	18,782	17%	-64%	-35%	71%	8%
Three Moon Water Supply	-47,210	-14,062	-17,762	-53,455	-124,032	-103%	-28%	-34%	-80%	-98%
Upper Burnett Water Supply	-72,365	-149,466	-68,456	10,825	343,570	-34%	-54%	-49%	5%	193%
Upper Condamine Water Supply	-68,347	25,011	-181,568	-98,123	245,254	-16%	8%	-67%	-37%	174%
Total	**-1,378,821**	**-2,054,198**	**1,246,772**	**5,223,865**	**7,711,388**	**-20%**	**-27%**	**16%**	**61%**	**98%**

Positive variance means Actual is higher than Forecast. Negative variance means Actual is lower than Forecast.

Figure 3.4.2 Analysis of Direct Renewals Expenditure Variances by Activity based on Authority's preferred cost index ($ nominal)

Figure 3.4.2 above shows that total SunWater actual expenditure was below forecast expenditure in the first two years of 20% and 27% respectively with actual expenditure above forecast expenditure of between 16% and 98% over the following 3 year period.

Some of the key observations from this comparison at the service contract level are summarised below:

- Two service contracts experienced actual expenditure above forecast in all five years – Burdekin Water Supply and Eton Water Supply.
- Three service contracts resulted with actual expenditure below forecasts in all five years - Callide Water Supply, Mareeba Water Supply and Three Moon Water Supply.
- The Burdekin Irrigation Distribution experienced the three largest below forecast variances in 2007, 2008 and 2010 of $852,285, $751,013 and $578,147 respectively.
- Mareeba Irrigation Distribution resulted with two of the three largest above forecast variances in 2011 and 2010 of $1,580,550 and $1,487,372 respectively.
- Emerald Irrigation Distribution experienced the second largest above forecast variance of $1,531,599 in 2010 with Pioneer Water Supply having an above forecast variance in 2010 of $1,353,926.

3.4.2. Cost Index based on SunWater's proposed approach for 2012-13 to 2016-17

The Authority advised Indec that SunWater's proposed approach for 2012-13 to 2016-17 is based on a weighted cost index by resource type.

Figure 3.4.3 details the cost escalation factors by resource type which SunWater proposes to apply when generating nominal forecast costs for the 2012-13 to 2016-17 periods.

Resource Type	Cost Escalation Factor
Labour	4.0% for 2011-12, 2.5% (CPI) thereafter
Contractors – commercial	4.0% for all years
Contractors – other	4.0% for all years
Materials – construction	4.0% for all years
Materials – chemicals	4.0% for all years
Materials – other	4.0% for all years
Plant, equipment & vehicles	4.0% for all years
All other costs	2.5% (CPI) for all years

Figure 3.4.3 SunWater's Proposed Cost Escalation Approach

The Authority confirmed that the cost escalation rates outlined above should be applied to the 2006-7 to 2010-11 period with the exception of Labour. Indec was advised by the Authority that the appropriate Labour cost escalation rate for each year is to be 2.5%.

The renewals expenditure forecast data available to Indec included details for total expenditure by resource type however did not include resource level forecasts at the project level. Based on the data available, Indec developed an annual weighted average cost escalation index, for each of the relevant years, based on the forecasts resource level splits at the SunWater total level. The SunWater total level is the sum of the 30 relevant service contracts.

Figure 3.4.4 below details the calculation of the cost escalation index to be applied to the 2006-07 to 2010-11 renewals expenditure forecasts based on SunWater's proposed approach to escalate forecasts over the 2012-13 to 2016-17 period. The weights for the resource type categories are based on the forecasts at the total SunWater level for each year.

The cost index based on SunWater's proposed approach applicable to the 2006-07 to 2010-11 period results in an annual cost index between 3.79% and 3.80% over the five year period.

The cost index based on SunWater's proposed approached is slightly below the Authority's preferred 4% annual cost index.

	2007	2008	2009	2010	2011
Forecast Renewals Expenditure (Total SunWater) (Real 05/06 $)					
Contractors, Materials, Plant, Equipment & Vehicle Hire ($)	7,471,917	7,807,630	8,934,222	7,883,988	8,070,279
Labour & Other ($)	1,198,163	1,249,550	1,364,181	1,312,916	1,228,264
Total ($)	8,670,081	9,057,180	10,298,403	9,196,904	9,298,543
Contractors, Materials, Plant, Equipment & Vehicle Hire (%)	86%	86%	87%	86%	87%
Labour & Other (%)	14%	14%	13%	14%	13%
Total (%)	100%	100%	100%	100%	100%
Cost Escalation Index (Weighted Average)					
Contractors, Materials, Plant, Equipment & Vehicle Hire (4%)	3.45%	3.45%	3.47%	3.43%	3.47%
Labour & Other (2.5%)	0.35%	0.34%	0.33%	0.36%	0.33%
Total	**3.79%**	**3.79%**	**3.80%**	**3.79%**	**3.80%**

Figure 3.4.4 Cost Indexation Based on SunWater's Proposed Approach

Figure 3.4.5 below details the results of the comparison of the adjusted forecast renewals expenditure based on SunWater's proposed approach to the actual renewals expenditure over the five year period 2006/07 to 2010/11 on a service contract basis.

	Actual, Nominal $					Forecast (IPM), Nominal $ (SunWater Indexation, Indec Efficiency Saving)				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Bundaberg Irrigation Distribution	992,148	655,900	665,233	946,883	1,560,223	866,775	717,470	526,045	848,278	1,088,249
Burdekin Irrigation Distribution	864,964	662,841	2,493,600	2,361,062	2,631,903	1,713,826	1,408,227	2,668,004	2,915,905	2,155,276
Dawson Irrigation Distribution	0	42,957	113,630	466,652	894,077	85,193	155,685	113,057	199,796	194,057
Emerald Irrigation Distribution	101,050	147,285	580,863	1,640,511	689,707	139,392	189,121	137,322	108,049	242,801
Eton Irrigation Distribution	17,926	31,897	231,540	613,198	499,761	49,903	9,711	74,353	79,426	117,646
Lower Mary Irrigation Distribution	43,085	70,244	132,076	108,239	141,079	65,901	159,540	191,267	138,543	58,275
Mareeba Irrigation Distribution	739,374	895,029	1,063,945	2,350,970	2,604,135	1,059,176	1,159,729	1,221,808	856,751	1,013,535
St George Irrigation Distribution	55,666	22,262	204,908	281,089	1,790,558	96,317	82,340	374,789	445,810	51,990
Barker Barambah Water Supply	74,358	86,304	54,223	83,523	266,714	183,246	101,628	88,600	62,388	99,113
Bowen Broken Water Supply	7,363	46,234	350,452	181,168	343,420	86,778	-2,573	75,691	113,253	62,372
Boyne Water Supply	46,671	5,009	133,655	36,661	115,598	73,548	69,517	178,337	236,062	82,890
Bundaberg Water Supply	96,253	171,175	365,331	416,082	725,424	384,137	420,840	330,760	334,268	268,252
Burdekin Water Supply	179,870	259,748	254,656	315,099	128,561	79,082	123,509	66,391	7,130	91,412
Callide Water Supply	26,832	41,215	73,405	73,789	80,731	98,336	242,892	224,673	260,582	169,856
Chinchilla Weir Water Supply	0	2,309	38,196	12,503	4,911	6,083	39,111	3,212	3,299	0
Cunnamulla Weir Water Supply	720	0	20,056	0	3,180	0	0	0	0	22,853
Dawson Water Supply	117,799	76,557	79,944	78,279	180,976	116,076	60,792	45,893	214,336	210,125
Eton Water Supply	233,706	170,552	204,665	345,417	259,063	205,048	83,405	108,049	38,484	140,218
Lower Fitzroy Water Supply	7,516	2,782	57,975	15,844	81,339	0	10,292	0	27,489	52,562
Lower Mary Water Supply	40,216	14,966	16,671	56,888	18,143	47,498	14,253	-14,083	-14,461	19,251
Macintyre Brook Water Supply	125,837	482,351	665,801	595,423	348,586	197,704	792,747	163,299	133,045	132,547
Maranoa Water Supply	2,352	0	0	1,184	0	0	0	0	0	28,566
Mareeba Water Supply	55,327	20,158	45,890	18,699	93,963	120,947	228,279	63,492	49,801	353,537
Nogoa Water Supply	812,458	572,685	322,967	595,089	361,209	74,012	342,261	340,522	532,392	159,971
Pioneer Water Supply	100,954	487,511	482,308	1,413,776	505,805	225,586	132,861	96,374	59,375	167,969
Proserpine Water Supply	50,237	41,027	72,498	9,348	40,080	54,159	44,688	27,646	58,735	87,890
St George Water Supply	392,427	172,765	116,422	283,836	266,888	334,576	482,876	177,757	164,932	245,669
Three Moon Water Supply	-1,494	36,894	34,429	13,045	2,906	45,624	50,754	51,884	65,973	125,691
Upper Burnett Water Supply	138,223	125,252	70,337	242,301	521,623	210,168	273,626	137,977	229,641	176,304
Upper Condamine Water Supply	355,790	329,339	87,797	166,768	385,803	423,292	303,116	267,780	262,791	139,169
Total	**5,677,628**	**5,673,248**	**9,033,472**	**13,723,327**	**15,546,366**	**7,042,384**	**7,696,698**	**7,740,898**	**8,432,071**	**7,758,046**

Figure 3.4.5 Analysis of Actual Direct Renewals Expenditure by Activity based on SunWater's proposed cost index ($ nominal)

The results of the analysis detailed in Figure 3.4.5 are very similar to the results under the analysis applying the Authority' preferred cost index in Figure 3.4.1, which is to be expected given that the cost index have minor differences.

Figure 3.4.6 below shows the absolute and relative variances when comparing actual renewals expenditure against the adjusted forecast renewals expenditure based on SunWater's proposed cost index applicable for the 2006-07 to 2010-11 period. Again, these results are fairly similar to the results observed under the Authority's preferred cost index as shown in Figure 3.4.2.

	$ Variance					% Variance				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Bundaberg Irrigation Distribution	125,373	-61,569	139,188	98,605	471,974	14%	-9%	26%	12%	43%
Burdekin Irrigation Distribution	-848,862	-745,387	-174,404	-554,842	476,627	-50%	-53%	-7%	-19%	22%
Dawson Irrigation Distribution	-85,193	-112,728	573	266,856	700,020	-100%	-72%	1%	134%	361%
Emerald Irrigation Distribution	-38,342	-41,836	443,541	1,532,462	446,907	-28%	-22%	323%	1418%	184%
Eton Irrigation Distribution	-31,977	22,186	157,187	533,773	382,116	-64%	228%	211%	672%	325%
Lower Mary Irrigation Distribution	-22,817	-89,297	-59,190	-30,303	82,804	-35%	-56%	-31%	-22%	142%
Mareeba Irrigation Distribution	-319,802	-264,700	-157,863	1,494,219	1,590,600	-30%	-23%	-13%	174%	157%
St George Irrigation Distribution	-40,652	-60,078	-169,881	-164,721	1,738,567	-42%	-73%	-45%	-37%	3344%
Barker Barambah Water Supply	-108,888	-15,324	-34,378	21,135	167,601	-59%	-15%	-39%	34%	169%
Bowen Broken Water Supply	-79,416	48,807	274,761	67,915	281,048	-92%	-1897%	363%	60%	451%
Boyne Water Supply	-26,877	-64,508	-44,682	-199,400	32,708	-37%	-93%	-25%	-84%	39%
Bundaberg Water Supply	-287,884	-249,665	34,572	81,814	457,172	-75%	-59%	10%	24%	170%
Burdekin Water Supply	100,788	136,238	188,265	307,969	37,150	127%	110%	284%	4319%	41%
Callide Water Supply	-71,504	-201,677	-151,268	-186,793	-89,125	-73%	-83%	-67%	-72%	-52%
Chinchilla Weir Water Supply	-6,083	-36,802	34,984	9,204	4,911	-100%	-94%	1089%	279%	No Forecast
Cunnamulla Weir Water Supply	720	0	20,056	0	-19,673	No Forecast	No Forecast	No Forecast	No Forecast	-86%
Dawson Water Supply	1,724	15,765	34,051	-136,057	-29,149	1%	26%	74%	-63%	-14%
Eton Water Supply	28,658	87,147	96,616	306,933	118,845	14%	104%	89%	798%	85%
Lower Fitzroy Water Supply	7,516	-7,510	57,975	-11,645	28,778	No Forecast	-73%	No Forecast	-42%	55%
Lower Mary Water Supply	-7,281	713	30,755	71,350	-1,109	-15%	5%	-218%	-493%	-6%
Macintyre Brook Water Supply	-71,867	-310,396	502,502	462,378	216,039	-36%	-39%	308%	348%	163%
Maranoa Water Supply	2,352	0	0	1,184	-28,566	No Forecast	No Forecast	No Forecast	No Forecast	-100%
Mareeba Water Supply	-65,620	-208,121	-17,602	-31,102	-259,574	-54%	-91%	-28%	-62%	-73%
Nogoa Water Supply	738,446	230,424	-17,555	62,697	201,238	998%	67%	-5%	12%	126%
Pioneer Water Supply	-124,632	354,650	385,934	1,354,400	337,836	-55%	267%	400%	2281%	201%
Proserpine Water Supply	-3,922	-3,660	44,852	-49,388	-47,810	-7%	-8%	162%	-84%	-54%
St George Water Supply	57,851	-310,112	-61,335	118,904	21,219	17%	-64%	-35%	72%	9%
Three Moon Water Supply	-47,119	-13,860	-17,455	-52,928	-122,785	-103%	-27%	-34%	-80%	-98%
Upper Burnett Water Supply	-71,946	-148,373	-67,640	12,660	345,319	-34%	-54%	-49%	6%	196%
Upper Condamine Water Supply	-67,502	26,222	-179,983	-96,023	246,634	-16%	9%	-67%	-37%	177%
Total	**-1,364,756**	**-2,023,450**	**1,292,574**	**5,291,257**	**7,788,320**	**-19%**	**-26%**	**17%**	**63%**	**100%**

Positive variance means Actual is higher than Forecast. Negative variance means Actual is lower than Forecast.

Figure 3.4.6 Analysis of Direct Renewals Expenditure Variances by Activity based on SunWater's proposed cost index ($ nominal)

Figure 3.4.6 above shows that total SunWater actual expenditure was below forecast expenditure in the first two years of 19% and 26% respectively with actual expenditure above forecast expenditure of between 17% and 100% over the following 3 year period.

Some of the key observations from this comparison at the service contract level are summarised below:

- Two service contracts resulted in actual expenditure above forecast in all five years – Burdekin Water Supply and Eton Water Supply.
- Three service contracts experienced actual expenditure below forecasts in all five years - Callide Water Supply, Mareeba Water Supply and Three Moon Water Supply.
- The Burdekin Irrigation Distribution resulted in the three largest below forecast variances in 2007, 2008 and 2010 of $848,862, $745,387 and $554,842 respectively.
- Mareeba Irrigation Distribution experienced two of the three largest above forecast variances in 2011 and 2010 of $1,494,219 and $1,590,600 respectively.

- Emerald Irrigation Distribution resulted in the second largest above forecast variance of $1,532,462 in 2010 with Pioneer Water Supply resulting in an above forecast variance in 2010 of $1,354,400.

3.4.3. Cost Index based on ABS annual rates of inflation

Based on discussions with the Authority, the cost index based on the Australian Bureau of Statistics (ABS) annual rates of inflation is the Brisbane All Groups Consumer Price Index (6401.0) for the year ended June each year. Figure 3.4.7 below details the annual indexation applied to the renewals expenditure forecasts for the 2006-07 to 2010-11 period based on the ABS annual rates of inflation.

	2007	2008	2009	2010	2011
Brisbane All Group CPI (June to June)	2.561%	5.119%	2.019%	3.201%	3.835%

Figure 3.4.7 Cost Indexation based on CPI

Figure 3.4.8 below details the results of the comparison of the adjusted forecast renewals expenditure based on a CPI cost index to the actual renewals expenditure over the five year period 2006/07 to 2010/11 on a service contract basis.

	Actual, Nominal $					Forecast (IPM), Nominal $ (CPI Indexation, Indec Efficiency Saving)				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Bundaberg Irrigation Distribution	992,148	655,900	665,233	946,883	1,560,223	856,488	718,008	517,401	829,640	1,064,682
Burdekin Irrigation Distribution	864,964	662,841	2,493,600	2,361,062	2,631,903	1,693,485	1,409,285	2,624,162	2,851,838	2,108,600
Dawson Irrigation Distribution	0	42,957	113,630	466,652	894,077	84,182	155,802	111,199	195,406	189,854
Emerald Irrigation Distribution	101,050	147,285	580,863	1,640,511	689,707	137,737	189,263	135,065	105,675	237,543
Eton Irrigation Distribution	17,926	31,897	231,540	613,198	499,761	49,310	9,718	73,131	77,681	115,098
Lower Mary Irrigation Distribution	43,085	70,244	132,076	108,239	141,079	65,119	159,660	188,124	135,499	57,013
Mareeba Irrigation Distribution	739,374	895,029	1,063,945	2,350,970	2,604,135	1,046,605	1,160,600	1,201,730	837,927	991,586
St George Irrigation Distribution	55,666	22,262	204,908	281,089	1,790,558	95,174	82,401	368,630	436,015	50,865
Barker Barambah Water Supply	74,358	86,304	54,223	83,523	266,714	181,072	101,704	87,144	61,017	96,967
Bowen Broken Water Supply	7,363	46,234	350,452	181,168	343,420	85,748	-2,575	74,447	110,765	61,021
Boyne Water Supply	46,671	5,009	133,655	36,661	115,598	72,675	69,569	175,407	230,875	81,095
Bundaberg Water Supply	96,253	171,175	365,331	416,082	725,424	379,578	421,156	325,325	326,924	262,443
Burdekin Water Supply	179,870	259,748	254,656	315,099	128,561	78,143	123,602	65,300	6,973	89,432
Callide Water Supply	26,832	41,215	73,405	73,789	80,731	97,169	243,075	220,981	254,857	166,177
Chinchilla Weir Water Supply	0	2,309	38,196	12,503	4,911	6,011	39,141	3,160	3,226	0
Cunnamulla Weir Water Supply	720	0	20,056	0	3,180	0	0	0	0	22,358
Dawson Water Supply	117,799	76,557	79,944	78,279	180,976	114,698	60,837	45,139	209,627	205,574
Eton Water Supply	233,706	170,552	204,665	345,417	259,063	202,615	83,468	106,273	37,639	137,181
Lower Fitzroy Water Supply	7,516	2,782	57,975	15,844	81,339	0	10,300	0	26,885	51,423
Lower Mary Water Supply	40,216	14,966	16,671	56,888	18,143	46,934	14,264	-13,852	-14,143	18,834
Macintyre Brook Water Supply	125,837	482,351	665,801	595,423	348,586	195,358	793,342	160,616	130,122	129,677
Maranoa Water Supply	2,352	0	0	1,184	0	0	0	0	0	27,948
Mareeba Water Supply	55,327	20,158	45,890	18,699	93,963	119,511	228,450	62,449	48,707	345,881
Nogoa Water Supply	812,458	572,685	322,967	595,089	361,209	73,134	342,518	334,927	520,694	156,506
Pioneer Water Supply	100,954	487,511	482,308	1,413,776	505,805	222,908	132,960	94,791	58,071	164,331
Proserpine Water Supply	50,237	41,027	72,498	9,348	40,080	53,516	44,721	27,192	57,445	85,987
St George Water Supply	392,427	172,765	116,422	283,836	266,888	330,605	483,239	174,836	161,308	240,349
Three Moon Water Supply	-1,494	36,894	34,429	13,045	2,906	45,083	50,792	51,032	64,523	122,969
Upper Burnett Water Supply	138,223	125,252	70,337	242,301	521,623	207,674	273,831	135,710	224,595	172,486
Upper Condamine Water Supply	355,790	329,339	87,797	166,768	385,803	418,268	303,344	263,380	257,017	136,156
Total	**5,677,628**	**5,673,248**	**9,033,472**	**13,723,327**	**15,546,366**	**6,958,800**	**7,702,476**	**7,613,696**	**8,246,806**	**7,590,036**

Figure 3.4.8 Analysis of Actual Direct Renewals Expenditure by Activity based on CPI cost index ($ nominal)

Figure 3.4.9 below shows the absolute and relative variances when comparing actual renewals expenditure against the adjusted forecast renewals expenditure based on a CPI based index applicable for the 2006-07 to 2010-11 period. The comparison on this basis produces marginally different results to the two earlier comparisons as the CPI index applied differs slightly in some years to the cost index under the Authority's preferred cost index and SunWater's proposed approach.

	$ Variance					% Variance				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Bundaberg Irrigation Distribution	135,661	-62,108	147,832	117,243	495,541	16%	-9%	29%	14%	47%
Burdekin Irrigation Distribution	-828,521	-746,444	-130,562	-490,776	523,302	-49%	-53%	-5%	-17%	25%
Dawson Irrigation Distribution	-84,182	-112,845	2,430	271,246	704,223	-100%	-72%	2%	139%	371%
Emerald Irrigation Distribution	-36,687	-41,978	445,798	1,534,836	452,165	-27%	-22%	330%	1452%	190%
Eton Irrigation Distribution	-31,384	22,179	158,409	535,518	384,663	-64%	228%	217%	689%	334%
Lower Mary Irrigation Distribution	-22,034	-89,416	-56,047	-27,259	84,066	-34%	-56%	-30%	-20%	147%
Mareeba Irrigation Distribution	-307,231	-265,571	-137,786	1,513,043	1,612,549	-29%	-23%	-11%	181%	163%
St George Irrigation Distribution	-39,509	-60,140	-163,722	-154,926	1,739,693	-42%	-73%	-44%	-36%	3420%
Barker Barambah Water Supply	-106,713	-15,400	-32,922	22,506	169,748	-59%	-15%	-38%	37%	175%
Bowen Broken Water Supply	-78,386	48,809	276,005	70,404	282,398	-91%	-1895%	371%	64%	463%
Boyne Water Supply	-26,005	-64,560	-41,751	-194,214	34,503	-36%	-93%	-24%	-84%	43%
Bundaberg Water Supply	-283,325	-249,981	40,007	89,158	462,981	-75%	-59%	12%	27%	176%
Burdekin Water Supply	101,727	136,146	189,355	308,126	39,129	130%	110%	290%	4419%	44%
Callide Water Supply	-70,337	-201,860	-147,576	-181,068	-85,447	-72%	-83%	-67%	-71%	-51%
Chinchilla Weir Water Supply	-6,011	-36,832	35,036	9,277	4,911	-100%	-94%	1109%	288%	No Forecast
Cunnamulla Weir Water Supply	720	0	20,056	0	-19,178	No Forecast	No Forecast	No Forecast	No Forecast	-86%
Dawson Water Supply	3,101	15,719	34,806	-131,348	-24,598	3%	26%	77%	-63%	-12%
Eton Water Supply	31,091	87,085	98,391	307,779	121,882	15%	104%	93%	818%	89%
Lower Fitzroy Water Supply	7,516	-7,518	57,975	-11,041	29,916	No Forecast	-73%	No Forecast	-41%	58%
Lower Mary Water Supply	-6,718	703	30,524	71,032	-692	-14%	5%	-220%	-502%	-4%
Macintyre Brook Water Supply	-69,521	-310,991	505,186	465,301	218,910	-36%	-39%	315%	358%	169%
Maranoa Water Supply	2,352	0	0	1,184	-27,948	No Forecast	No Forecast	No Forecast	No Forecast	-100%
Mareeba Water Supply	-64,184	-208,292	-16,559	-30,008	-251,918	-54%	-91%	-27%	-62%	-73%
Nogoa Water Supply	739,324	230,167	-11,960	74,395	204,703	1011%	67%	-4%	14%	131%
Pioneer Water Supply	-121,954	354,550	387,517	1,355,705	341,474	-55%	267%	409%	2335%	208%
Proserpine Water Supply	-3,279	-3,694	45,306	-48,097	-45,907	-6%	-8%	167%	-84%	-53%
St George Water Supply	61,822	-310,474	-58,414	122,528	26,539	19%	-64%	-33%	76%	11%
Three Moon Water Supply	-46,577	-13,898	-16,603	-51,478	-120,063	-103%	-27%	-33%	-80%	-98%
Upper Burnett Water Supply	-69,451	-148,579	-65,372	17,706	349,137	-33%	-54%	-48%	8%	202%
Upper Condamine Water Supply	-62,478	25,995	-175,583	-90,249	249,648	-15%	9%	-67%	-35%	183%
Total	**-1,281,172**	**-2,029,228**	**1,419,776**	**5,476,521**	**7,956,330**	**-18%**	**-26%**	**19%**	**66%**	**105%**

Positive variance means Actual is higher than Forecast. Negative variance means Actual is lower than Forecast.

Figure 3.4.9 Analysis of Direct Renewals Expenditure Variances by Activity based on CPI cost index ($ nominal)

Figure 3.4.6 above shows that total SunWater actual expenditure was below forecast expenditure in the first two years of 18% and 26% respectively with actual expenditure above forecast expenditure of between 19% and 105% over the following 3 year period.

Some of the key observations from this comparison at the service contract level are summarised below:

- Two service contracts experienced actual expenditure above forecast in all five years – Burdekin Water Supply and Eton Water Supply.
- Three service contracts experienced actual expenditure below forecasts in all five years - Callide Water Supply, Mareeba Water Supply and Three Moon Water Supply.
- The Burdekin Irrigation Distribution resulted in the three largest below forecast variances in 2007, 2008 and 2010 of $828,521, $746,444 and $490,776 respectively.

- Mareeba Irrigation Distribution resulted in two of the three largest above forecast variances in 2011 and 2010 of $1,513,043 and $1,612,549 respectively.
- Emerald Irrigation Distribution experienced the second largest above forecast variance of $1,534,836 in 2010 with Pioneer Water Supply resulting in an above forecast variance in 2010 of $1,355,705.

The application of the various cost indexation factors has not altered the overall outcomes of the comparisons with similar trends emerging at the total level and at the service contract level. The application of the different cost indexes essentially changes the size of the variances under the different approaches.

3.5. Methodology to Match Forecast with Actual Renewals Expenditure Projects

Indec performed a cost comparison of actual cash spend projects matched with forecast cash spend projects for the 2006-07 to 2010-11 period. The cost comparison includes only those projects funded from the renewals annuity and excludes any projects directly funded by third parties such as dam safety upgrades.

As the data file of forecast projects did not include any unique codes to individually identify the projects, the matching process involved an intensive labour and manual based checking process.

The following methodology was applied by Indec to form the comparison and the selection of the projects for matching.

1. A list of approximately 2,200 actual projects was provided by SunWater, with actual costs from 2006-07 to 2010-11. About 1,800 of these projects were relevant to the 30 service contracts being analysed by Indec. The remaining 400 projects were part of service contracts not part of this irrigation price review.

2. A sample of projects was selected from the list of actual projects based on the Authority's criteria. All actual projects that had a yearly cost (including overheads & indirects) greater than 5% of the yearly total actual service contract project cost (including overheads & indirects) was included in this sample. About 550 actual projects were identified as part of the actual project sample.

3. A sample of projects was selected from the forecast project list which included a project based description. To improve the number of projects in the sample, any forecast project that had a yearly projected cost of greater than 3% of the yearly total actual service contract project cost was included in this sample. About 1,150 forecast projects were included in this sample of forecast projects.

4. Projects were then matched on the following basis:

    a. Multiple forecast projects could be matched to an individual actual project i.e. many to one relationship.

    b. As the detailed project list file included projects classified to water supply schemes, these forecast projects could potentially be matched to either the bulk supply or irrigation distribution service contracts associated with the relevant water supply scheme.

    c. A match could occur if the forecast and actual project descriptions had similar characteristics along the following lines:

        i. Same type of activity (e.g. replace, refurb, assessment, install, paint etc)

        ii. Matching location (e.g. Tinana Creek, Lower Mary, Burdekin Falls Dam etc)

        iii. Same or similar equipment/asset (e.g. pump, radial gate, crane, fencing, valve etc)

        iv. Some other unique detail which matched.

5. This process was assisted by observing:

    a. The year the project was forecast to occur with the year it actually occurred

    b. The scale of the project forecast cost with the actual cost (1000's, 10,000's, 100,000's, etc). This could often help differentiate between projects involving design phases (small $$) and installation phases (large $$).

The matching process was made more difficult due to the actual project descriptions being truncated in the data file received from SunWater.

Despite the above matching criteria, numerous ambiguities remained and a significant number of actual and forecast projects could not be matched. Where numerous forecast projects could have matched an actual project, sometimes the decision was made to match the lowest cost forecast project in order to be conservative and flag a greater number of projects for review.

3.5.1. Limitations and Qualifications on Project Matching

Indec's ability to match projects was based on a considerable level of judgement due to the limitations of the forecast and actual data sets not including a unique project identifier to enable a match of forecast with actual projects. Indec has applied its best endeavours to match appropriate projects and is unable to provide any surety that the matched projects are identical projects or that all relevant projects selected in the samples have been matched. Any interpretations of the results of the matching process should consider these limitations and qualifications on the matching process.

3.5.2. Adjustments Made to Forecast Project Costs

The forecast costs, in real 2005/06 dollars, have been adjusted on the following basis:

- Applying an Indec Efficiency Saving which has been calculated by adopting the method used by Indec in arriving at the Indec Efficiency Saving;
- Applying a 4% annual indexation based on the Authority's preferred cost escalation factor; and
- Adjusting the year/s the forecast spend occurred to align with the year/s the actual spend occurred.

The actual data spans from 2006/07 to 2010/11 as provided by SunWater and overheads & indirects have been excluded from the actual data for comparative purposes.

3.5.3. Source files

The actual data was sourced from the following files provided by SunWater:

- *Annuity expenditure inc descriptions 2007 to 2011 20110808.xls*

The source for the forecast data was the following file from SunWater's Irrigation Pricing Model:

- *Refurb Program Reconcilliation.xls*

3.5.4. Results of the Project Matching Process

The outcome of the project matching process following the criteria outlined in the Authority's ToR and adopting the process outlined in Section 3.5 above, resulted in 125 actual projects matching with 275 forecast projects. Appendix A provides details for each service contract.

From the set of matched projects, actual expenditure on 28 projects varied above their forecast expenditure by greater than or equal to the Authority's 30% exceedance threshold. The average variance above forecast for these 28 projects is 154% or a total of $2.4m. Figure 3.5.1 below details the results of the project matching exercise.

Description, Actual	Description, Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
Bundaberg Irrigation Distribution		**-**	**-**	**31,539**	**189**	**-**	**-**	**-**	**21,418**	**129**	**-**	**-**	**-**	**10,121**	**61**	**-**	
Refurbish Regulator Gate 1 (repaint, ano																	
	REGULATOR GATE Refurbish Gate - remove, repaint, anodes & bearings, install - moved from 2004	-	-	31,539	189	-	-	-	21,418	129	-	-	-	10,121	61	-	47%
Burdekin Irrigation Distribution		**265,112**	**-**	**-**	**13,335**	**200,846**	**203,179**	**-**	**-**	**1,075**	**16,190**	**61,934**	**-**	**-**	**12,260**	**184,655**	
10BRI14 Install Walkways & Handrails BMC																	
	BOUNDARY FENCING Refurbish Fence - replace wires and posts as required	-	-	-	13,335	200,846	-	-	-	1,075	16,190	-	-	-	12,260	184,655	1141%
A731 Millaroo Ch 3Earth Ch 05-001392																	
	LATERAL 3 Refurbish Earth Channel 3 with HDPE Pipeline	265,112	-	-	-	-	203,179	-	-	-	-	61,934	-	-	-	-	30%
Dawson Irrigation Distribution		**-**	**-**	**19,639**	**5,981**	**-**	**-**	**-**	**13,390**	**4,078**	**-**	**-**	**-**	**6,248**	**1,903**	**-**	
Install Signs - Theodore Irrigation																	
	THEODORE SECTION Refurbish: WH&S Install warning signs	-	-	19,639	5,981	-	-	-	13,390	4,078	-	-	-	6,248	1,903	-	47%
Lower Mary Irrigation Distribution		**-**	**10,648**	**8,506**	**20,379**	**12,878**	**-**	**6,875**	**4,804**	**10,843**	**8,420**	**-**	**3,773**	**3,702**	**9,536**	**4,458**	
07-002568 Walker Pt: WHS-Study & impleme																	
	MAIN WALL Refurbish: implementation of safety items raised at	-	10,648	5,584	-	-	-	6,875	3,605	-	-	-	3,773	1,979	-	-	55%
09MVA06 Repl. Cmn Control-Owanyilla Pump																	
	CONTROL Replacement	-	-	2,922	10,223	3,649	-	-	1,198	4,193	1,497	-	-	1,723	6,030	2,153	144%
10MVA13 Refurb Fence along Channel WPMC																	
	FENCE Refurbish Fence - refurbishment & selective	-	-	-	10,156	-	-	-	-	6,650	-	-	-	-	3,506	-	53%
11MVA02 Install Concrete Surrounds and C																	
	CONCRETE STRUCTURE Refurbish: Screens - check if exists	-	-	-	-	9,229	-	-	-	-	6,924	-	-	-	-	2,305	33%
Mareeba Irrigation Distribution		**89,830**	**-**	**-**	**-**	**-**	**5,079**	**-**	**-**	**-**	**-**	**84,751**	**-**	**-**	**-**	**-**	
07MBA36 Refurbish Road/Berm network																	
	ROADS WITHIN BIB Refurbish Road - high priority (refer	89,830	-	-	-	-	5,079	-	-	-	-	84,751	-	-	-	-	1668%
Barker Barambah Water Supply		**-**	**30,234**	**-**	**-**	**-**	**-**	**20,667**	**-**	**-**	**-**	**-**	**9,566**	**-**	**-**	**-**	
07-002441 BP Dam: Study: Dam 5 yearly da																	
	BJELKE-PETERSEN DAM Study: Dam safety inspection @	-	30,234	-	-	-	-	20,667	-	-	-	-	9,566	-	-	-	46%
Bowen Broken Water Supply		**-**	**-**	**169,978**	**-**	**-**	**-**	**-**	**42,548**	**-**	**-**	**-**	**-**	**127,430**	**-**	**-**	
Refurb Protection Works-Bowen River Weir																	
	PROTECTIVE WORKS Refurbish Pwks - reinstate concreted	-	-	141,298	-	-	-	-	26,929	-	-	-	-	114,369	-	-	425%
Regrade & Resurface Access Roads at Outl																	
	ACCESS ROAD Refurbish Road - imported material, structure	-	-	28,680	-	-	-	-	15,619	-	-	-	-	13,061	-	-	84%
Bundaberg Water Supply		**-**	**22,259**	**12,114**	**-**	**-**	**-**	**13,578**	**7,390**	**-**	**-**	**-**	**8,681**	**4,724**	**-**	**-**	
07-002508 Ben &erson: Refurbish Gate - c																	
	FIXED WHEEL GATE NO1 Refurbish Gate - corrosion, rope,	-	22,259	12,114	-	-	-	13,578	7,390	-	-	-	8,681	4,724	-	-	64%
Burdekin Water Supply		**10,274**	**23,226**	**19,684**	**-**	**-**	**5,550**	**10,775**	**8,735**	**-**	**-**	**4,724**	**12,451**	**10,949**	**-**	**-**	
06-004201 Gantry Crane Refurb Winches																	
	GANTRY CRANE Refurbish Winches - drums, ropes, drives etc	10,274	4,852	-	-	-	5,550	2,621	-	-	-	4,724	2,231	-	-	-	85%
07-007171 B Falls Dam O'haul Radial Gate																	
	LEFT HAND RADIAL GATE Refurbish: paint, bearings	-	18,374	19,684	-	-	-	8,154	8,735	-	-	-	10,220	10,949	-	-	125%

Figure 3.5.1 Results from Project Matching showing projects with above 30% exceedance ($ nominal with 4% indexation applied to forecast)

Description, Actual	Description, Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
Callide Water Supply		**-**	**-**	**53,829**	**3,653**	**-**	**-**	**-**	**30,315**	**2,058**	**-**	**-**	**-**	**23,514**	**1,596**	**-**	
Install & Refurb Fencing - Callide DC																	
	CALLIDE DIVERSION CHANNEL Refurbish: Installation of	-	-	53,829	3,653	-	-	-	30,315	2,058	-	-	-	23,514	1,596	-	78%
Dawson Water Supply		**-**	**-**	**-**	**26,036**	**17,880**	**-**	**-**	**-**	**6,001**	**6,241**	**-**	**-**	**-**	**20,035**	**11,639**	
09DVA18 Pump 2 MOS repairs																	
	PUMP NO2 Refurbish Pump; Not in 03 budget so moved out a	-	-	-	26,036	-	-	-	-	6,001	-	-	-	-	20,035	-	334%
11DVA10 Replace Communications and Contr																	
	REMOTE TELEMETRY UNIT Change Out - major problems with	-	-	-	-	17,880	-	-	-	-	6,241	-	-	-	-	11,639	186%
Eton Water Supply		**117,510**	**19,416**	**-**	**-**	**-**	**73,411**	**12,129**	**-**	**-**	**-**	**44,100**	**7,286**	**-**	**-**	**-**	
06-006325 PSTN 1, 2, 3 New Metering																	
	MIRANI DIV PUMP STATION 1 Enhance:Rising Main Metering	117,510	19,416	-	-	-	36,705	6,065	-	-	-	44,100	7,286	-	-	-	60%
	RISING MAIN PUMP STN NO 2 Enhance:Rising Main Metering	-	-	-	-	-	36,705	6,065	-	-	-	-	-	-	-	-	-
Lower Fitzroy Water Supply		**-**	**-**	**22,084**	**-**	**-**	**-**	**-**	**11,541**	**-**	**-**	**-**	**-**	**10,543**	**-**	**-**	
Refurb Hydraulic Syst-Eden Bann Fishlock																	
	HYDRAULIC SYSTEM Refurbish Hyd - replace minor valves,	-	-	22,084	-	-	-	-	11,541	-	-	-	-	10,543	-	-	91%
Macintyre Brook Water Supply		**-**	**349,835**	**600,521**	**173,961**	**864**	**-**	**199,194**	**341,933**	**99,052**	**492**	**-**	**150,641**	**258,588**	**74,908**	**372**	
IPS08MAB11 Refurbish: Major Refurb of We																	
	ALL DRAINS LEFT BANK NFA Whestone Weir Refurbishment	-	349,835	600,521	173,961	864	-	199,194	341,933	99,052	492	-	150,641	258,588	74,908	372	76%
Pioneer Water Supply		**14,524**	**46,443**	**116,892**	**1,143,316**	**13,059**	**8,496**	**13,554**	**27,970**	**156,284**	**1,785**	**6,028**	**32,890**	**88,922**	**987,033**	**11,274**	
06-005254 TD Risk Assessment Spillway																	
	TEEMBURRA DAM MAIN WALL Study: Risk Assessment -	10,660	11,797	19,634	-	-	7,967	8,818	14,675	-	-	2,692	2,979	4,958	-	-	34%
A783 Marian Weir Outlet Works05-001444																	
	OUTLET WORKS Enhancement: Enlarge the outletworks -	3,864	34,647	97,258	1,143,316	13,059	528	4,736	13,295	156,284	1,785	3,336	29,911	83,964	987,033	11,274	632%
Proserpine Water Supply		**30,182**	**22,070**	**11,593**	**-**	**-**	**17,823**	**15,430**	**8,105**	**-**	**-**	**12,359**	**6,641**	**3,488**	**-**	**-**	
06-005255 PFD Overtop&Spillway Upgde cos																	
	SPILLWAY Study: Risk Assessment - Overtopping and	10,963	22,070	11,593	-	-	7,664	15,430	8,105	-	-	3,299	6,641	3,488	-	-	43%
A763 PFD Refurb Paint Seal GV2 05-001424																	
	900 DIA B/FLY GUARD VALVE Refurbish: Patch paint and seal	19,219	-	-	-	-	10,159	-	-	-	-	9,060	-	-	-	-	89%
St George Water Supply		**22,668**	**5,940**	**15,600**	**-**	**-**	**15,984**	**4,189**	**11,000**	**-**	**-**	**6,683**	**1,751**	**4,600**	**-**	**-**	
07SGA06 BMD Spillway and Risk Assessment																	
	SPILLWAY BMD Risk Assessment - Overtopping and spillway	22,668	5,940	15,600	-	-	15,984	4,189	11,000	-	-	6,683	1,751	4,600	-	-	42%
Upper Burnett Water Supply		**39,530**	**11,377**	**-**	**-**	**-**	**23,756**	**6,837**	**-**	**-**	**-**	**15,775**	**4,540**	**-**	**-**	**-**	
06-1673 Wuruma Dam Spillway Risk Assess																	
	MAIN WALL Overall Spillway Risk Assessment	39,530	11,377	-	-	-	23,756	6,837	-	-	-	15,775	4,540	-	-	-	66%
Upper Condamine Water Supply		**-**	**119,990**	**-**	**-**	**-**	**-**	**62,001**	**-**	**-**	**-**	**-**	**57,989**	**-**	**-**	**-**	
IPS08UCO02 Enchancement: Replace guard v																	
	915 GUARD VALVE - R/H Replace gate valve with butterfly	-	119,990	-	-	-	-	31,001	-	-	-	-	57,989	-	-	-	94%
	915 GUARD VALVE - L/H Replace gate valve with butterfly valve	-	-	-	-	-	-	31,001	-	-	-	-	-	-	-	-	-
Grand Total		**589,631**	**661,438**	**1,081,979**	**1,386,851**	**245,527**	**353,278**	**365,228**	**529,149**	**279,519**	**33,129**	**236,353**	**296,210**	**552,830**	**1,107,332**	**212,398**	

Figure 3.5.1 Results from Project Matching showing projects with above 30% exceedance ($ nominal with 4% indexation applied to forecast)

From the set of 125 matched projects, the average variance between forecast expenditure and actual expenditure resulted in a 24% variance below forecast.

It should be noted that the results of the matching process is influenced by extreme outliers skewing the result.

The matching process identified the two largest outlier projects with actual expenditure above forecast as:

- Pioneer Water Supply, Marian Weir Outlet Works - $1.1m above forecast variance
- Macintyre Brooke Water Supply, Major Refurb of Whetstone Weir - $500,000 above forecast variance

The average variance for the remaining 97 projects, which are below the Authority's 30% exceedance threshold, resulted is a 60% average variance below forecast or a total of $4.7m expenditure below forecasts. The largest outlier (underspend) projects, with rough descriptions and amounts, are:

- Burdekin Irrigation Distribution, Replace SMO with MO - $1m below forecast variance
- St George Water Supply, Gate Refurb - $500,000 below forecast variance
- Burdekin Water Supply, Pump Refurb - $400,000 below forecast variance
- Emerald Irrigation Distribution, Selma Drain Desilt - $300,000 below forecast variance
- Upper Burnett Water Supply, Replace Meter Outlets - $300,000 below forecast variance
- Bundaberg Irrigation Distribution, Refurb Pump - $200,000 below forecast variance

4. ASSET RESTORATION RESERVE BALANCE ANALYSIS

This section of the report explains the outcomes from the review of SunWater's proposed metholodogy for converting 22 water supply scheme based Asset Restortaion Reserve (ARR) balances into separate ARR balances for each distribution and bulk supply service contract. The analysis also reviews the application of the methodology adopted by SunWater to determine if it generates appropriate results and recommends an alternative metholodgy developed by Indec. This section of the report also outlines the issue which arose during this review and recommends further analysis is required to ensure that appropriate ARR balances are generated.

4.1. Scope of Analysis

The scope of the ARR balance analysis is derived from the Authority's TOR and involves two steps:

- Reviewing SunWater's proposed methodology for converting the 8 water supply scheme ARR balances into separate ARR balances for each bulk supply segment and distribution system; and
- Determining whether the application of SunWater proposed methodology generates an appropriate result and, if not, recommend adjusted opening balances for relevant scheme segments for 2012-13.

As the context of this review is associated with the irrigation price review, Indec has focused its review on the analysis associated with ARR balances as they apply to the irrigation sector for the 8 water supply schemes impacted by the analysis.

The scope of this review has not included a review of the annuity calculation itself, the assumptions applied in the calculation of the annuity, the methodology to allocate costs to different customer sectors (or water priorities) and the associated uplift factors applied by SunWater to calculate the opening ARR balances for the 2012-2017 irrigation price path.

During the review, Indec identified other issues which may impact on ARR balances for all 30 service contract rather than the 16 service contracts subject to review under the scope of this analysis. This has resulted in the scope of the review extending to all 30 ARR balances to determine if SunWater's proposed methodology generates appropriate ARR balances. Section 4.7 outlines the issues identified by Indec during its review.

4.2. SunWater's Proposed Methodology

SunWater's proposed methodology is articulated in its Working Paper titled *Renewals Annuity* (January 2011).

In summary, the current ARR balances commenced in 2000 with a zero balance and have been rolled forward by SunWater on the following basis:

- Opening balance is determined which is the closing balance from the previous period;
- Determining actual inflows to the ARR which capture irrigation revenues only including any rural water community service obligation revenue and termination fees. Only the proportion of revenue assumed to apply to recovering renewals activities is included, which is deemed to be the proportion of the renewals annuity component of the total revenue requirement;
- Determining actual outflows to the ARR which capture the irrigation share of renewals expenditure. This is determined by including actual renewals related expenditure and multiplying by the irrigation sector share of lower bound costs; and
- Calculating interest on balances, which is based on the opening ARR balance and the interest rate applied is SunWater's cost of capital as determined by the weighted average cost of capital (WACC).

These calculations are undertaken on an annual basis to calculate the irrigation sector only ARR balances. SunWater applies an uplift factor to convert the irrigation only ARR balances to 'whole scheme' ARR balance. SunWater has undertaken this conversion to enable a change in its methodology to allocate capital costs for bulk water service contracts using hydrologic utilisation factors (HUF).

A more detailed explanation of the SunWater's proposed methodology can be found in SunWater's Working Paper titled *Renewals Annuity* (January 2011).

SunWater is proposing to unbundled or split the ARR balances based on a water supply scheme basis to a bulk supply and distribution basis for the following eight water supply schemes:

- Bundaberg
- Burdekin-Haughton
- Dawson Valley
- Eton
- Lower Mary
- Mareeba Dimbulah
- Nogoa Mackenzie (Emerald)
- St George

The ARR balances for each of the eight water supply schemes listed above have been split by SunWater into two balances representing bulk supply and distribution to enable unbundled tariffs to be calculated on a bulk supply and distribution basis.

SunWater's Working Paper titled *Renewals Annuity* (January 2011) explains that this unbundling process was required to enable a clear and transparent separation of costs for bulk water and distribution to enable unbundled water tariffs to be determined. The ARR is a key input into the renewals annuity calculation which is a cost component in developing the revenue requirement to determine tariffs.

SunWater's proposed methodology has relied on a mix of detailed actual data for the period 2006 to 2011 and forward looking renewals expenditure data and has not included actual data spanning back from 2000 to 2006.

SunWater's proposed methodology is described in its Working Paper as follows:

> *SunWater adopted unbundled ARR balances proportional to renewals expenditure in bulk water and distribution. This approach involved determining the PV of the actual renewals expenditure from 1 July 2006 to 30 June 2010 and the forecast renewals expenditure from 1 July 2010 to 2035 in each bulk water and distribution system. The ARR balances at 1 July 2006 were then split proportional to the PV of the expenditure in each.*

SunWater notes in its Working Paper that the proposed approach to unbundling of the ARR opening balances will not precisely reflect the actual unbundled balances that would have occurred if historical data was available from 2000. SunWater notes that the proposed approach may generate outcomes that are clearly erroneous or distort the renewals calculation.

SunWater performed 'high-level sanity checks' of the splits in the ARR balances to 'identify any outlier results and concluded that, with two exceptions (Mareeba and Dawson), the approach was not generating spurious outcomes'. Due to these issues, SunWater applied what seemed to be arbitrary adjustments of $800,000 to Dawson and $100,000 to Mareeba to ensure that the bulk water sectors of these schemes avoided a negative renewals annuity. The percentage splits applied on the 1 July 2006 ARR balances for Dawson and Mareeba to generate unbundled ARR balances was based on the outcomes after the above adjustments were made.

4.3. Review of SunWater's Proposed Methodology

The most appropriate approach to re-create the ARR balances based on a bulk supply and distribution basis, or unbundled basis, is to base the unbundling of the ARR balances on actual historical data which established the existing balances on an bundled basis. The existing ARR balances represent the historical sum of actual revenues received to fund renewals activities, actual expenditure on renewals activities and any interest incurred or earnt on the annual running balances.

On a principles basis, Indec does not support SunWater's proposed methodology as it does not include the full period of actual data from 2000 to 2011 to capture the actual revenues received and actual expenses incurred and the corresponding interest component which are the basis for the existing balances on a bundled basis. The proposed approach includes 5 years of actual data including both actual revenues received and expenditures incurred and includes 25 years of forecast expenditure to develop a proxy percentage split based on a mix of actual data and forward looking data. The inclusion of the 25 year forward looking data has the potential to introduce distortions and biases if the timing and magnitude of forecast expenditure does not closely resemble the timing and magnitude of revenue collection and asset expenditure which has occurred over the past 11 years to arrive at the current ARR balances. The outcomes observed for Mareeba and Dawson and the arbitrary adjustments made by SunWater provide anecdotal evidence that SunWater's proposed approach has some limitations and has introduced some anomalies.

A further issue which emerges from SunWater's proposed approach is that a positive bundled ARR balance results in both unbundled ARR balances being positive and a negative bundled ARR balance results in both unbundled ARR balances being negative. The actual situation may involve a positive or negative bundled ARR balance resulting from a combination of a negative and a positive unbundled ARR balances.

4.4. Alternative Proposed Methodology

Indec's view is that the most appropriate methodology to unbundle the ARR balances would be to recreate the balances based on actual historical transactions from the inception of the ARR balances in 2000. This approach is also supported by SunWater.[2]

Indec discussed the availability of historical data with SunWater and it was identified that historical data may be available as part of the data set associated with the 2005-06 to 2010-11 irrigation price paths. SunWater investigated this further and provided a data file to Indec which is further explained in Section 4.5 below.

Indec identified some issues with the data which required some adjustments as outlined in Section 4.6. Indec indentified further issues which could not be resolved within the scope of the analysis as defined by the Authority's ToR dated 2 June 2011. These issues are outlined further in Section 4.7 and have not enabled Indec to recommend appropriate ARR balances. The ARR balances presented in this report are therefore preliminary and indicative in nature and should not be relied upon to calculate renewals annuities for pricing purposes.

Section 4.8 provide more details on the methodology applied by Indec and Section 4.9 outlines the indicative and preliminary results of the analysis.

[2] SunWater Background Paper Renewals Annuity January 2010 p7

4.5. Data Source

The source data for this analysis was supplied by SunWater following a request by Indec.

Data for historical annuity costs and revenues from 2000-01 to 2004-05, with budget estimates for 2005-06, was provided by SunWater in the following spreadsheet.

- *Copy of Historical Segment Annuity Balances (Draft 7 - V32) v2.xls*

It is understood that the above file was the data source to establish the ARR balances for the 2005-06 to 2010-11 irrigation price paths.

Data for annuity costs and revenues for the 2006-07 to 2010-11 period was provided by SunWater in the following spreadsheet:

- *2007 to 2011 Irrigation annuity to indec 19 9 2011.xls*

4.6. Adjustments to SunWater Data

Indec was required to make a number of adjustments to SunWater's data relating to the 2006-07 to 2010-11 period. These adjustments including the rationale are detailed below:

4.6.1. Channel relining projects

The following Emerald Irrigation Distribution channel relining projects have been excluded as they are not funded by irrigation customers:

WBS	Description	2007	2008	2009	2010	2011
N-WLIW-04-08-12-CD	Selma Lateral S3 06/07 HDPE lining	(8,391)	(156,394)			
N-WLIW-04-08-12-CE	Sel Main Channel 06/07 HDPE lining	(18,697)	(292,590)			

4.6.2. Adjustments to Projects

The following four projects were adjusted at the request of the Authority

Service Contract	Location	2007	2008	2009	2010	2011
Pioneer Water Supply	Marian Weir		(34,647)	(97,258)	(1,179,908)	(13,059)
Macintyre Brook Water Supply	Whetstone Weir			(220,000)		
Pioneer Water Supply	Palm Tree Creek				(247,860)	
Nogoa Water Supply	Bedford Weir Fabri-dam					(82,643)

4.6.3. Corrections to SunWater Calculations

The irrigation portion of the full annuity cost/revenue was calculated incorrectly by SunWater for 2010/11 and has been corrected by Indec. The details of the error found are documented below:

File name: 2007 to 2011 Irrigation annuity to indec 19 9 2011.xls

Sheet: Annuity by Sc

Column N: Irrigation Annuity % of Cost. Indec modified the formula to reference 2011 % rather than 2009 %.

Column AF: Irrigation Annuity % of Revenue for 2011. Indec modified the formula to reference 2011 % rather than 2009 %.

4.6.4. Revenue Transfers

The unbundling process introduces the need to transfer revenue from distribution to bulk supply to effectively transfer the portion of revenue collected from distribution customers which relates to the bulk water. SunWater first commenced the revenue transfer in 2007/08 on a cost basis (excludes any revenues above lower bound costs associated with the bulk supply charge) and for the 2010/11 year based the transfer on a revenue basis (includes actual revenues associated with bulk supply to capture any revenues above lower bound costs).

For the purposes of Indec's analysis, the amount of revenue transfer from irrigation distribution to bulk supply for the 2000/01 to 2005/06 period was estimated based on the proportion of revenue transferred in the last four year period based on SunWater's approach. The proportion of the revenue transferred was very constant over the last four years, with the exception of 2010/11, as well as Eton Supply Scheme in 2009/10. For the purposes of this indicative analysis, Indec has applied the 2007/08 proportion of revenue transfer to apply to 2000/01 to 2005/06 period.

The approach to revenue transfer requires further analysis to identify the most appropriate methodology i.e. cost or revenue basis and to identify the appropriate approach to apply to the 2000/01 to 2005/06 period.

4.7. Data Issues

Indec identified a number of data issues during its analysis which has impacted on the analysis and some of these issues have prohibited Indec's from fully developing its recommend approach to generate more appropriate ARR balances. These issues are outlined below including any impacts on the analysis:

4.7.1. Indirect and Overhead Costs

Indec has completed its analysis on a direct cost basis as per the Authority's ToR and has therefore excluded any indirect and overhead costs allocated by SunWater to renewals activities.

In the calculation of the 2006-07 to 2010-11 irrigation price paths, indirect costs applicable to water supply schemes were fully allocated to forecast operating costs only and not allocated to forecast renewals expenditure. The exception was costs relating to activities associated with the former Engineering Services (ES) division of SunWater. For the purposes of irrigation pricing, ES was effectively treated as an external service provider and any activities provided by ES to SunWater schemes was fully costed and included both direct and indirect costs. The break up of direct and indirect costs relating to ES services was not transparent. Any costs from ES charged to a water supply scheme excluded any further indirect cost allocation.

In the determination of the 2006-07 to 2010-11 price paths, ES was allocated a portion of overheads costs relating to the former Corporate division located in the Brisbane office. These overheads were absorbed by ES and recovered from ES activities delivered to both SunWater and other external customers. The services delivered by ES to SunWater's water supply schemes included both operations and maintenance activities and renewals activities.

For actual reporting purposes and for the calculation of the ARR balances, SunWater has allocated indirect and overhead costs to renewals activities. Indec believes that this may create anomalies as the allocation of indirect and overhead costs to actual renewals expenditure for the purposes of rolling forward the ARR has the potential to lead to adverse pricing outcomes.

Allocating actual indirect and overhead costs to renewals expenditure may result in the allocated indirect and overhead costs being recovered twice from customers. These indirect and overhead cost have been recovered via the tariffs set for the 2006-07 to 2010-11 irrigation price paths and potentially will be recovered for a second time in future price paths when rolled into the ARR balances. This situation may arise as the allocated indirect and overhead costs are captured in the ARR balance and consequently increase the level of the renewals annuity and irrigation tariffs for future price paths.

The Authority will need to give this issue further consideration and assess the likely impacts on the analysis and the ARR balances. Indec believes that adjustments are required to maintain the integrity of the ARR balances and to avoid any potential double recovery of costs.

4.7.2. Definition of direct, indirect and overhead costs

Any change in definition of a direct, indirect and overhead cost between the approach applied to prepare the forecasts and the current definitions applied by SunWater in reporting actual results is likely to have implications on the ARR balance. The scope of this review is based on direct costs only and Indec has not investigated this matter further to identify if any issues are likely to arise. Indec recommends to the Authority that further analysis and investigations is undertaken to understand if any changes in definitions of direct, indirect and overhead costs has occurred due to the introduction of the new reporting system and if so, if any changes impact on the ARR balances.

4.7.3. 2005/06 budget estimate data

The data set provided by SunWater included budget forecast data for the 2005/06 year. Indec did make a request to SunWater for actual data and SunWater was unable to satisfy this request due to the time and resources required to extract this data. This has required Indec to complete the analysis with forecast data for the 2005/06 year and the ARR balances generated by Indec's approach is preliminary and indicative in nature. This use of 2005/06 budget estimate data in Indec's analysis limits the ability to compare Indec's indicative results with the approach proposed by SunWater.

4.7.4. Interest on ARR Annuity Balance

Indec's analysis excludes the interest on the ARR balances as the data and balances provided by SunWater did not include interest on ARR balance and Indec did not have access to the SunWater Financial Model which undertakes this part of the calculation for the 2006-07 to 2010-11 period. Indec has noted from SunWater's Working Paper that SunWater has applied an interest rate of 9.689% (pre-tax nominal) for the 2006-07 to 2010-11 period which SunWater has stated is based on the rate applied to calculate the annuity.

Further investigations are required to identify the interest rate applied by SunWater to ARR balances over the 2000-01 to 2005-06 period.

The exclusion of interest on ARR balances results in the ARR balances generated by Indec's approach as being indicative only.

4.8. Alternative Proposed Methodology

Indec's analysis has combined the adjusted data for the 2000-01 to 2005-06 period and the 2006-07 to 2010-11 period to effectively recreate the ARR balances based on a unbundled basis using actual data (with the exception of the 2005-06 year). The adjustments made to the data have been outlined in Section 4.6.

The following sections brief outline the methodology applied by Indec in recreating the ARR balances on an unbundled basis.

4.8.1. 2000-01 to 2005-06 Data

The renewals cost and revenue data for the 2000-01 to 2005-06 period is presented by segment, or profit/cost centre, and only the irrigation portion of the spend is presented. Indec has assigned each of the relevant 126 segments to a service contract, with those segments not relevant to irrigation pricing excluded from the analysis. Each of the relevant segments have also been assigned to one of the 22 water supply schemes, which is necessary to determine revenue transfer from irrigation distribution to bulk supply.

4.8.2. ARR Annuity Opening Balance for 2006-07

Using actual historical cost and revenue data for 2000/01 to 2004/05, along with budget data for 2005/06, Indec has calculated the ARR opening balance for 2006/07 for each service contract. These opening balances are inclusive of revenue transfer from irrigation distribution to bulk supply service contracts

As 2005/06 actual cost and revenue data was not available, Indec was unable to confirm that the 2006/2007 ARR opening balance provided by SunWater matches with Indec's analysis.

4.8.3. 2006-07 to 2010-11 Data

The 2006/07 ARR opening balances calculated by Indec as outlined in Section 4.8.2 has been used with annuity cost and revenue data from 2006/07 to 2010/11 to calculate the 2010/11 ARR closing balances for each service contract.

As the 2006/07 to 2010/11 data presented by SunWater is the full annuity cost/revenue, Indec has calculated the irrigation portion of the annuity cost/revenue using the same percentages as used by SunWater.

As outlined in Section 4.6.4, revenue transfer has already been included by SunWater and Indec has not calculated these transfers.

4.9. Indicative and Preliminary ARR Balances

The section outlines the indicative and preliminary ARR balances derived from Indec's analysis. Appendix C contains indicative and preliminary ARR balances workings on a service contract basis.

Figure 4.9.1 below details the indicative and preliminary results of Indec's analysis and presents the closing ARR balance on an annual basis for each service contract on an unbundled basis on an irrigation only basis.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Bundaberg Irrigation Distribution	-132,415	19,750	-284,766	-505,491	-563,495	-777,462	-436,141	213,932	910,041	1,527,837	1,400,710
Burdekin Irrigation Distribution	309,569	-170,828	-245,192	-628,346	-987,269	-1,617,324	-921,319	-96,519	-785,807	-1,134,551	-2,133,585
Dawson Irrigation Distribution	-182,231	163,837	307,927	644,649	854,183	681,044	735,918	757,906	732,672	438,043	-186,575
Emerald Irrigation Distribution	-19,533	-167,352	-346,936	-916,252	-1,122,750	-1,135,755	-935,978	-753,927	-570,529	-977,290	-1,000,763
Eton Irrigation Distribution	-45,880	-100,372	-134,011	-189,958	-257,250	-469,740	-339,562	-207,293	-225,966	-494,182	-682,811
Lower Mary Irrigation Distribution	-8,210	-113,204	-180,025	-226,793	-252,131	-300,208	-216,799	-181,808	-177,149	-140,693	-149,720
Mareeba Irrigation Distribution	400,681	1,127,568	1,214,218	479,298	576,372	953,690	1,027,365	961,517	773,721	-572,167	-2,200,746
St George Irrigation Distribution	-4,048	-38,966	-171,121	-176,072	-271,084	-433,430	-372,763	-271,168	-348,410	-482,313	-2,092,988
Barker Barambah Water Supply	-32,003	-80,484	-64,196	-271,644	-364,884	-422,492	-395,240	-377,176	-321,098	-304,802	-450,390
Bowen Broken Water Supply	5,275	18,157	24,060	32,958	-153,870	-102,190	-99,745	-97,482	-98,028	-94,935	-95,484
Boyne Water Supply	2,085	8,572	137,412	175,097	98,857	154,570	173,120	200,888	221,833	250,813	261,979
Bundaberg Water Supply	100,503	281,995	428,414	607,188	681,725	932,168	1,108,635	1,207,977	1,150,036	1,074,013	663,285
Burdekin Water Supply	209,997	607,502	752,959	771,844	526,395	633,947	1,040,478	1,274,998	1,537,048	1,765,728	2,129,865
Callide Water Supply	-25,934	-67,194	-52,680	-317,306	-540,827	-531,626	-416,679	-318,047	-244,667	-170,555	-105,165
Chinchilla Weir Water Supply	20,034	30,529	58,786	53,756	53,086	81,113	83,887	85,652	68,309	65,287	65,175
Cunnamulla Weir Water Supply	1,300	2,661	4,676	-17,926	-27,447	-45,210	-31,534	-18,002	-23,317	-10,600	-2,173
Dawson Water Supply	115,219	443,957	787,255	1,122,142	1,436,329	1,826,659	1,816,837	1,830,889	1,861,882	1,894,542	1,850,882
Eton Water Supply	27,176	112,180	293,614	115,570	109,921	247,059	232,310	256,403	240,095	-3,607	-174,278
Lower Fitzroy Water Supply	-5,216	234,301	14,568	-72,064	-156,297	-187,658	-180,404	-172,792	-172,101	-163,247	-158,362
Lower Mary Water Supply	4,409	25,031	25,370	1,635	-21,766	-75,357	-28,943	54,580	116,486	164,249	212,279
Macintyre Brook Water Supply	55,584	126,850	226,759	255,911	264,496	358,356	374,937	61,838	-216,981	-640,335	-838,580
Maranoa Water Supply	1,123	2,623	4,200	-9,648	-19,079	-42,337	-35,222	-25,621	-15,820	-7,031	3,131
Mareeba Water Supply	351,934	405,402	870,617	1,260,474	1,693,960	2,258,557	2,447,824	2,676,052	2,913,936	3,203,458	3,400,960
Nogoa Water Supply	171,559	698,440	1,334,970	1,382,459	1,798,725	505,224	392,474	367,412	337,550	346,204	464,655
Pioneer Water Supply	159,884	-157,472	-155,184	-327,859	-288,672	-318,730	-227,141	-316,654	-336,710	-240,782	-349,449
Proserpine Water Supply	30,035	-16,288	12,984	54,149	14,704	13,149	15,569	25,245	19,255	50,457	55,162
St George Water Supply	261,141	290,190	652,507	1,010,523	1,373,232	1,682,529	1,489,818	1,514,909	1,623,716	1,556,922	1,497,663
Three Moon Water Supply	-108,202	-164,332	-138,511	-124,714	-365,079	-363,188	-270,481	-214,806	-155,845	-76,997	4,958
Upper Burnett Water Supply	1,629	80,794	140,250	125,265	11,841	105,323	210,074	328,306	453,952	471,819	215,963
Upper Condamine Water Supply	89,121	101,866	98,460	148,258	75,384	108,657	-42,438	-145,878	-62,061	-96,498	-258,982
Total	**1,754,586**	**3,705,713**	**5,617,385**	**4,457,104**	**4,177,309**	**3,719,337**	**6,198,858**	**8,621,332**	**9,206,042**	**7,198,788**	**1,346,617**

Figure 4.9.1 Indicative & Preliminary Closing ARR Balances (Irrigation Only) ($ nominal)

A positive balance arises when the annuity balance is in surplus from the customer's perspective and a negative balance arises when the annuity balance is in deficit from the customer's perspective.

Figure 4.9.2 below details the indicative and preliminary results of Indec's analysis and presents the 2010/11 closing ARR balance on a total scheme basis. The total scheme basis balance is derived after applying the uplift factor as determined by SunWater and presented in its Working Paper.

	2011 Closing Balance, Irrigation Only	Uplift Factor	2011 Closing Balance, Total Scheme
Bundaberg Irrigation Distribution	1,400,710	1	1,400,710
Burdekin Irrigation Distribution	-2,133,585	1	-2,133,585
Dawson Irrigation Distribution	-186,575	1	-186,575
Emerald Irrigation Distribution	-1,000,763	1	-1,000,763
Eton Irrigation Distribution	-682,811	1	-682,811
Lower Mary Irrigation Distribution	-149,720	1	-149,720
Mareeba Irrigation Distribution	-2,200,746	1	-2,200,746
St George Irrigation Distribution	-2,092,988	1	-2,092,988
Barker Barambah Water Supply	-450,390	1.201	-540,807
Bowen Broken Water Supply	-95,484	11.535	-1,101,372
Boyne Water Supply	261,979	1.951	511,167
Bundaberg Water Supply	663,285	1.365	905,151
Burdekin Water Supply	2,129,865	2.711	5,773,979
Callide Water Supply	-105,165	1.796	-188,924
Chinchilla Weir Water Supply	65,175	1.807	117,768
Cunnamulla Weir Water Supply	-2,173	1.047	-2,275
Dawson Water Supply	1,850,882	1.104	2,043,411
Eton Water Supply	-174,278	1.261	-219,717
Lower Fitzroy Water Supply	-158,362	13.340	-2,112,554
Lower Mary Water Supply	212,279	1.678	356,175
Macintyre Brook Water Supply	-838,580	1.075	-901,136
Maranoa Water Supply	3,131	1.019	3,190
Mareeba Water Supply	3,400,960	1.318	4,481,244
Nogoa Water Supply	464,655	1.774	824,230
Pioneer Water Supply	-349,449	1.649	-576,347
Proserpine Water Supply	55,162	1.974	108,892
St George Water Supply	1,497,663	1.199	1,795,409
Three Moon Water Supply	4,958	1.151	5,706
Upper Burnett Water Supply	215,963	1.132	244,554
Upper Condamine Water Supply	-258,982	1.336	-346,096
Total	**1,346,617**		**4,135,170**

Figure 4.9.2 Preliminary & Indicative Closing ARR Balances 2010/11 ($ nominal) (Total Scheme)

Figure 4.9.3 below details the step changes which result from indicative and preliminary results of the 2010/11 closing ARR balance on an irrigation basis.

The four step changes highlighted, including the preliminary and indicative impacts are:

1. Excluding indirect and overheads

2. Adjustments to renewals projects based on advice from the Authority

3. Application of Indec methodology

4. Revenue transfer adjustment applicable to the period 2001/02 to 2005/06

	2011 Annuity Closing Balance	Change in 2011 Annuity Balance from Base Case			
	Base Case from SunWater (after formula corrections)	Step 1: After excluding Indirects & Overheads	Step 2: After making adjustments to 4 projects as advised by QCA	Step 3: Indec Methodology	Step 4: Revenue Transfer Adjustments
Bundaberg Irrigation Distribution	732,446	1,922,591	-	(1,443,331)	189,004
Burdekin Irrigation Distribution	(3,427,050)	2,129,977	-	(1,021,346)	184,834
Dawson Irrigation Distribution	(295,577)	337,973	-	(215,871)	(13,099)
Emerald Irrigation Distribution	372,842	168,287	-	(1,586,072)	44,180
Eton Irrigation Distribution	(916,421)	284,448	-	(400,461)	349,623
Lower Mary Irrigation Distribution	(778,672)	148,297	-	467,995	12,660
Mareeba Irrigation Distribution	(2,181,178)	1,919,980	-	(2,068,362)	128,814
St George Irrigation Distribution	(792,397)	245,204	-	(1,537,102)	(8,693)
Barker Barambah Water Supply	(646,261)	234,848	-	(38,977)	-
Bowen Broken Water Supply	(112,052)	2,734	-	13,834	-
Boyne Water Supply	385,756	8,475	-	(132,252)	-
Bundaberg Water Supply	(1,048,463)	849,491	-	1,051,261	(189,004)
Burdekin Water Supply	662,720	428,324	-	1,223,655	(184,834)
Callide Water Supply	(102,121)	135,458	-	(138,502)	-
Chinchilla Weir Water Supply	27,055	7,662	-	30,458	-
Cunnamulla Weir Water Supply	(9,300)	8,444	-	(1,316)	-
Dawson Water Supply	1,859,636	174,813	-	(196,666)	13,099
Eton Water Supply	(597,983)	407,851	-	365,477	(349,623)
Lower Fitzroy Water Supply	27,763	1,533	-	(187,658)	-
Lower Mary Water Supply	42,823	52,520	-	129,596	(12,660)
Macintyre Brook Water Supply	(1,787,074)	721,555	239,276	22,138	-
Maranoa Water Supply	3,850	3,285	-	(4,004)	-
Mareeba Water Supply	988,878	147,925	-	2,392,971	(128,814)
Nogoa Water Supply	(566,102)	559,045	47,642	476,118	(44,180)
Pioneer Water Supply	(1,853,915)	855,070	1,074,169	(71,565)	-
Proserpine Water Supply	(32,275)	54,449	-	32,988	-
St George Water Supply	(601,014)	597,638	-	1,492,346	8,693
Three Moon Water Supply	(71,835)	50,171	-	26,622	-
Upper Burnett Water Supply	(196,927)	387,433	-	25,457	-
Upper Condamine Water Supply	(732,850)	334,434	-	139,434	-
Total	**(11,645,699)**	**13,179,915**	**1,361,086**	**(1,153,135)**	**-**

Figure 4.9.3 Step Changes resulting from Indec's Preliminary & Indicative Analysis

(Irrigation Only)

APPENDIX A

Terms of Reference

Terms of Reference

SunWater Water Supply Schemes 2011-2016 Price Paths

Part (B) Review of the SunWater Pricing Model - Component 2; and Other Concurrent Activities

2 June 2011

1. Project Background

The Authority engaged INDEC Pty Ltd under to Terms of Reference dated 21 September 2010 to undertake:

(a) an audit of SunWater's Business Operating Model (BOM);

(b) a review of SunWater's Financial Model (SFM) to be undertaken in a two stage process (Components 1 and 2); and

(c) other concurrent activities, including providing ad-hoc advice and peering group reviews in relation to the outcomes of other consultancies.

INDEC Pty Ltd submitted its final reports in relation to the Audit of SunWater's BOM and Component 1 of the Review of SunWater's Financial Model in late March 2011.

2. Purpose and Requirements of Consultancy

The purpose of these Terms of Reference is to confirm and detail the Authority's requirements in relation to:

(a) Component 2 of the review of SunWater's Financial Model; and

(b) Other Concurrent Activities.

3. Component 2 - Review of the SunWater Financial Model (pricing version)

Under Component 1 of the review of SunWater's Financial Model, INDEC Pty Ltd undertook an audit to establish the integrity and robustness of a preliminary version the SunWater Financial Model (SFM) (Version 601).

Subsequently, in January 2011, SunWater used a revised version of its SFM to generate Network Service Plans (NSPs) for each of its irrigation water supply schemes (WSSs).

The Authority intends to generate draft prices for each tariff group for each WSS by:

(a) incorporating a pricing module into the SFM (subsequent to version 601) to allow tariffs to be generated according to the Authority's pricing principles;

(b) modifying (some) SFM costs at a scheme, regional and head office level; and

(c) applying alternative approaches to overhead and indirect cost allocation.

Therefore, it will be necessary for the consultant to review the version of the SFM used to generate the January 2011 NSPs and to:

(a) identify any changes incorporated into the SFM following completion of the Component 1 audit;

(b) assess the appropriateness, validity and impact of any changes identified in (a) above

(c) review the modules of the SFM not reviewed during the Component 1 review;

(d) review the logic and integrity of SunWater's electricity forecasting model which is a separate model to the SFM and provides static electricity cost inputs into the SFM;

(e) review the logic and integrity of the Authority's pricing module;

(f) ensure all changes to costs, once finalised by the Authority, are correctly incorporated; and

(g) ensure all changes to overhead and indirect cost allocation approaches, once finalised by the Authority, are correctly incorporated.

The above will necessarily include a review of the transfer of information between other models into the SFM, where applicable, and into scheme service contract spreadsheets within the SFM.

4. Other Concurrent Activities

The Authority also requires the consultant to undertake the following concurrent activities:

(a) SunWater's Forecast Total Costs 2005-06 to 2010-11:

(i) provide the Authority with an electronic file containing relevant details of SunWater's total forecast expenditure, including efficiency gains (proposed by the Tier 1 Group) and the annual rate of cost escalation applied to the period 2006-07 to 2010-11 at the service contract level ie bulk supply and distribution.

(ii) an additional step may involve the disaggregatation of the cost data for each tariff group;

(iii) an additional step may involve the restatement of the allocation of overhead costs in the forecast data to broadly replicate the existing overhead allocation methodology applied to actual data to enable a more direct comparison of forecast cost with actual costs.

(iv) determine whether:

– SunWater implemented previously proposed efficiency gains;

– SunWater reduced its cost base to reflect the loss of SEQ water responsibilities; and

– SunWater's proposed costs for the 2011-16 price path reflect previously anticipated efficiency gains based upon an analysis of actual and forecast costs for the previous period;

(b) Undertake an analysis of fixed and variable costs for each service contract ie bulk supply and distribution and an additional step may involve an analysis at the proposed tariff group level:

(i) establish the causal rationale (that is, explain the relationship to be expected) between water use and the variable costs (that is, costs which may vary over the five year regulatory period) of activities identified in NSPs;

(ii) establish whether there are any other discernible drivers of variable costs; and

(iii) for each service contract, estimate the portion of scheme costs proposed for 2011-12 to 2016-17 that vary according to water use and other drivers (as agreed with the Authority).

(iv) If requested by the Authority, for each tariff group in each scheme, estimate the portion of scheme costs proposed for 2011-12 to 2016-17 that vary according to water use and other drivers (as agreed with the Authority), and quantify it in terms of $ per ML delivered.

For this purpose the consultant should:

(i) identify the proposed methodology to be applied; and

(ii) take into account an optimal (prudent and efficient) management approach that considers SunWater's operating environment.

(c) Undertake an analysis of 2006-07 to 2010-11 renewals expenditure.

For each SunWater service contract :

(i) provide an electronic file of SunWater's forecast renewals annuities for 2006-07 to 2010-11 on a project by project basis excluding overheads;

(ii) compare previously forecast renewals expenditures from 2006-07 to 2010-11 excluding overheads with:

- actual expenditure over that period excluding overheads;
- an adjusted renewals forecast based on an index to be advised by the Authority before the commencement of the consultancy;
- an adjusted renewals forecast based on SunWater's approach proposed for the next price path; and
- an adjusted renewals forecast based on actual ABS annual rates of inflation for the period;

(iii) identify for those service contracts where actual costs have exceeded forecast costs by 30% over the indexed estimated costs for each irrigation service contract;

(iv) for those service contracts identified in (iii) above, identify projects the cost of which exceeds 5% of total annual renewals costs;

(v) review SunWater's proposed methodology for converting the 22 scheme ARR balances into separate ARR balances for each distribution system and bulk segment; and

(vi) determine whether the application of the methodology adopted by SunWater in (v) above generates an appropriate result and, if not, recommend adjusted opening balances for relevant scheme segments for 2012-13.

For (ii), the consultant is to identify and adjust for unplanned expenditure during that period (details to be sought from and provided by SunWater) and for any expenditure deemed not to be prudent by the Authority.

For (ii), the consultant is to include in its proposal the option to undertake this analysis including overheads costs.

5. Proposal Specifications and Fees

The proposal should include the name, address and legal status of the tenderer, and provide:

(a) a fixed price quote for the provision of the services for Component 2 of the Review of SunWater's Pricing Model; and

(b) separate fixed price quote for undertaking each of the three components of the other concurrent activities.

The fee quoted is to be inclusive of all expenses and disbursements. A full breakdown of consultancy costs will be required with staff costs reconciled to the consultancy work plan.

Total payment will be made within 28 days of receiving an invoice at the conclusion of the consultancy.

6. Resources/Data Provided

The consultant will be required to source information from relevant agencies as well as taking into account the following reports:

(a) SunWater (2006) Irrigation Price Paths 2006/07-2010/11 Final Report http://www.sunwater.com.au/irrigationpricing/SunWater_Irrigation_Price_Paths_Final_Report.pdf;

(b) Queensland Competition Authority (2000), *Statement of Regulatory Pricing Principles for the Water Sector*, December 2000. http://www.qca.org.au/files/PricingPrinciples.pdf; and

(c) SunWater's SAP based asset and financial management system and pricing model including supporting data templates.

Additional information relevant to this consultancy may also be found in the Authority's publications, available from the Authority or for downloading from its website at www.qca.org.au

The consultancy will commence in June 2011.

Dates for completion will be determined at the time of appointment.

Dates should be presented to the Authority as part of a detailed project plan submitted by the consultant for the Authority's approval. For this project, the consultant agrees that the Authority may provide the consultant's detailed project plan to SunWater.

7. Contractual Arrangements

This consultancy will **only** be offered in accordance with the Authority's standard contractual agreement.

This agreement can be viewed at http://www.qca.org.au/about/consultancyagreement.php

8. Reporting

The consultant will be required to provide the Authority with progress reports on an "as needs" basis or at least weekly and drafts of final reports will be required prior to project completion. If necessary, the consultant should advise at earliest opportunity any critical issues that may impede progress of the consultancy, particularly issues that impact on the successful delivery of the purpose and requirements of the consultancy as outlined in section 2 above.

At the conclusion of the consultancy, the consultant will be required to provide the Authority with a personal presentation on the findings of the analysis in addition to presenting three (3) copies of a written report. An electronic version of the final report is also required, saved in Microsoft© Word with any numeric data in Microsoft© Excel.

9. Confidentiality

Under no circumstances is the selected consultant to divulge any information obtained from the Authority for the purposes of this consultancy to any party other than with the express permission of the Authority.

10. Conflicts of Interest

For the purpose of this consultancy, the consultant is required to affirm that there is no, and will not be any, conflict of interest as a result of this consultancy.

11. Insurance

The consultant must hold all necessary work cover and professional indemnity insurance.

12. Quality Assurance

The consultant is required to include details of quality assurance procedures to be applied to all information and outputs provided to the Authority.

APPENDIX B

Service Contract Analysis Tables

Bundaberg Irrigation Distribution

		Actual, Nominal $					Forecast, Nominal $					$ Variance, Nominal $					% Variance
Actual	Forecast	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	All Years
06-1700 Goob MC S005 Replace Walkway																	
	INTAKE STRUCTURE Refurbish Metalwork - incl paint trash racks & refurb	57,740	5,424	- 4,298	-	-	79,510	7,469	- 5,918	-	-	- 21,770	- 2,045	1,620	-	-	-27%
06-1711 Isis Pstn Install PLC Controls																	
	COMMON CONTROL Replacement	193,219	81,016	790	-	-	263,427	110,454	1,077	-	-	- 70,208	- 29,438	- 287	-	-	-27%
07-002478 Walker Pstn Upgrade PLC																	
	CONTROL Replacement	-	84,559	3,376	-	-	-	73,303	2,926	-	-	-	11,256	449	-	-	15%
09BIA29 Refurb Pump, Motor & Disch. Valv																	
	DISCHARGE VALVE Refurbish Valve - corrosion, seals, bearings etc incl.	-	-	72,236	51,579	-	-	-	15,897	11,351	-	-	-	- 126,976	- 90,666	-	-64%
	PUMP Refurbish Pump - bearings, casing, wear rings etc	-	-	-	-	-	-	-	89,024	63,566	-	-	-	-	-	-	-
	DISCHARGE VALVE Refurbish Valve - corrosion, seals, bearings etc incl.	-	-	-	-	-	-	-	7,631	5,449	-	-	-	-	-	-	-
	PUMP Refurbish Pump - bearings, casing, changeout impeller	-	-	-	-	-	-	-	6,359	4,540	-	-	-	-	-	-	-
	PUMP Refurbish Abbotsford Pump Station - Refurbish No2 Flygt Pump. (ha	-	-	-	-	-	-	-	12,718	9,081	-	-	-	-	-	-	-
	PUMP Refurbish Pump - bearings, casing, wear rings etc - actual	-	-	-	-	-	-	-	27,665	19,754	-	-	-	-	-	-	-
	PUMP Refurbish Pump - casing, bearings etc	-	-	-	-	-	-	-	12,718	9,081	-	-	-	-	-	-	-
	PUMP Refurbish Pump - bearings, casing, wear rings etc-actual cost	-	-	-	-	-	-	-	27,201	19,422	-	-	-	-	-	-	-
Refurbish Regulator Gate 1 (repaint, ano																	
	REGULATOR GATE Refurbish Gate - remove, repaint, anodes & bearings,	-	-	31,539	189	-	-	-	21,418	129	-	-	-	10,121	61	-	47%
Walker Street Pstn - Switchboard Replace																	
	SWITCHBOARD HIGH VOLTAGE Refurbish: Item added to refurbish swith	-	-	94,852	- 121,165	-	-	-	- 66,909	85,470	-	-	-	451,700	- 577,006	-	-127%
	SWITCHBOARD Refurbish: Refurbish HV switchboard, Circuit Breakers etc	-	-	-	-	-	-	-	- 66,909	85,470	-	-	-	-	-	-	-
	SWITCHBOARD H.V. Refurbish Zorcs - replace elements	-	-	-	-	-	-	-	- 223,030	284,900	-	-	-	-	-	-	-
Grand Total		**250,959**	**170,999**	**198,495**	**- 69,397**	**-**	**342,937**	**191,227**	**- 138,133**	**598,214**	**-**	**- 91,979**	**- 20,228**	**336,628**	**- 667,611**	**-**	

Burdekin Irrigation Distribution

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
08BRI61 Clare CMCB - Replace SMO with MO																	
	CB050W1 877.82L TYPE SMO Replacement	-	46,268	408	-	-	-	11,272	99	-	-	-	- 926,672	- 8,172	-	-	-95%
	CB050W3 1200.00L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	CB052W2 2770.00L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	CB069W1 7490.76L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	CB171W3 4.27L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA008W1 975.36R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA009W1 581.99R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA009W2 497.0R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA012W1 502.92L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA012W2 856.49R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA012W3 507.0L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA013W1 1816.61R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA013W3 2300R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA014W1 2550.0R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA014W2 2545.08R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA015W1 1320.39R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA015W2 1325.0R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA020W1 2827.02R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA054W1 1973R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA084W1 592.84END TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA085W1 496.82R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA086W1 3368.08L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA087W1 3407.97L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA088W1 3907.54L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MB082W1 536.45ENDTYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MB083W1 536.45END TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	CA035W1 451.10L TYPE SMO Replacement	-	-	-	-	-	-	11,784	104	-	-	-	-	-	-	-	-
	CA036W1 807.72L TYPE SMO Replacement	-	-	-	-	-	-	11,784	104	-	-	-	-	-	-	-	-
	CA038W1 1783.08L TYPE SMO Replacement	-	-	-	-	-	-	11,784	104	-	-	-	-	-	-	-	-
	CA157W1 1051.56L TYPE SMO Replacement	-	-	-	-	-	-	11,784	104	-	-	-	-	-	-	-	-
	CA158W1 1203.96L TYPE SMO Replacement	-	-	-	-	-	-	11,784	104	-	-	-	-	-	-	-	-
	CA159W1 1325.88L TYPE SMO Replacement	-	-	-	-	-	-	11,784	104	-	-	-	-	-	-	-	-
	CA160W1 1478.28L TYPE SMO Replacement	-	-	-	-	-	-	11,784	104	-	-	-	-	-	-	-	-
	DA003W1 451.10L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA005W1 1190.24L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA007W2 2580.0L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA010W1 2731.01L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA010W2 2945.59L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA010W3 3146.0L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DA011W1 3456.43L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DB016W1 4035.55L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA052W1 240.79L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA052W2 302.97L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA053W1 302.97R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA087W1 160.93L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA088W1 481.58L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA090W1 2042.16L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA090W2 2042.16L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA090W3 960.36R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA090W4 960.36R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA091W1 2774.91R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA091W2 2774.91R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA092W1 2400.30L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA092W2 2750.82L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA092W3 2750.82 TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA114W1 0.0R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA128W1 1043.94R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA157W1 239.27L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA158W1 752.25L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-

	MA159W1 1341.12R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA160W1 1545.34R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA161W1 1767.84R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA162W1 1958.34R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA163W1 2135.12R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA164W1 2299.72R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA165W1 2449.07R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MA166W1 2610.92R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DB017 W1 4432 L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DB033W1 6559.30L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DB034W1 6986.02L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DB035W1 7178.04L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DB036W1 7450.0L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DB037W1 7717.54L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DB038W1 7930.90L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DB041W1 8421.62L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DB042W1 9185.15L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	DB043W1 9197.34L SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MB075W1 310.90 TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MB076W1 487.68L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MB076W2 438.91L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MB077W1 487.68R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MB078W1 824.58R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MB085W1 1165.25R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MB085W2 1165.25R TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MB086W1 1179.58L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
	MB086W2 1179.58L TYPE SMO Replacement	-	-	-	-	-	-	11,272	99	-	-	-	-	-	-	-	-
08BRI64 Dalbeg PSTNA - Replace Discharge																	
	DISCHARGE VALVE Replacement	-	42,063	4,831	-	-	-	113,377	13,022	-	-	-	- 71,314	- 8,191	-	-	-63%
10BRI14 Install Walkways & Handrails BMC																	
	BOUNDARY FENCING Refurbish Fence - replace wires and posts as requi	-	-	-	13,335	200,846	-	-	-	1,075	16,190	-	-	-	12,260	184,655	1141%
A731 Millaroo Ch 3Earth Ch 05-001392																	
	LATERAL 3 Refurbish Earth Channel 3 with HDPE Pipeline	265,112	-	-	-	-	203,179	-	-	-	-	61,934	-	-	-	-	30%
Grand Total		**265,112**	**88,331**	**5,239**	**13,335**	**200,846**	**203,179**	**1,086,317**	**21,602**	**1,075**	**16,190**	**61,934**	**- 997,986**	**- 16,363**	**12,260**	**184,655**	

Dawson Irrigation Distribution

		Actual, Nominal $					Forecast, Nominal $					$ Variance, Nominal $					% Variance
Actual	Forecast	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	All Years
Install Signs - Theodore Irrigation																	
	THEODORE SECTION Refurbish: WH&S Install warning signs to channel	-	-	19,639	5,981	-	-	-	13,390	4,078	-	-	-	6,248	1,903	-	47%
Grand Total		**-**	**-**	**19,639**	**5,981**	**-**	**-**	**-**	**13,390**	**4,078**	**-**	**-**	**-**	**6,248**	**1,903**	**-**	

Emerald Irrigation Distribution

		Actual, Nominal $					Forecast, Nominal $					$ Variance, Nominal $					% Variance
Actual	Forecast	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	All Years
11NMA23 Regravel Channel Rd 19 Mile- S4																	
	EARTHWORKS Refurbish: Berm road maintenance on all roads	-	-	-	-	43,883	-	-	-	-	57,699	-	-	-	-	- 45,012	-51%
	PAVEMENT Replacement	-	-	-	-	-	-	-	-	-	31,197	-	-	-	-	-	-
BI1075 Selma Drains - Desilting																	
	ALL DRAINS LEFT BANK NFA Selma Ongoing Desilting	-	36,137	-	-	-	-	310,007	-	-	-	-	- 273,870	-	-	-	-88%
Grand Total		**-**	**36,137**	**-**	**-**	**43,883**	**-**	**310,007**	**-**	**-**	**88,896**	**-**	**- 273,870**	**-**	**-**	**- 45,012**	

Eton Irrigation Distribution

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
11ETO06 Replace Switchboard - Brightley																	
	SWITCH BOARD Replacement	-	-	-	-	24,208	-	-	-	-	48,099	-	-	-	-	- 23,891	-50%
Brightley PSTN 2 Refurbish Pump Unit 1																	
	PUMP NO 1 Refurbish - seals, glands etc	-	11,239	2,040	-	-	-	8,801	1,598	-	-	-	2,438	443	-	-	28%
Refurb Pumps Motors 1 & 3 - Mt Alice PS																	
	PUMP MOTOR Bearing replacement etc. every 10yrs ($2,500), Mid life ove	-	-	18,526	-	-	-	-	16,157	-	-	-	-	2,368	-	-	15%
Grand Total		**-**	**11,239**	**20,566**	**-**	**24,208**	**-**	**8,801**	**17,755**	**-**	**48,099**	**-**	**2,438**	**2,811**	**-**	**- 23,891**	

Lower Mary Irrigation Distribution

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
06-1761 Cop/Bend Pstn UN1 Pump Refurb																	
	PUMP Refurbish Pump	8,142	24,006	-	-	-	6,514	19,208	-	-	-	- 3,584	- 10,568	-	-	-	-31%
	PUMP Refurbish Units - incl. Motors, seals, etc	-	-	-	-	-	5,211	15,366	-	-	-	-	-	-	-	-	-
07-002558 Walker Pt: 2km fence needs rep																	
	FENCING Refurbish Fencing - 2km/yr, pursue party fencing policy (GS). Re	-	13,934	-	-	-	-	20,667	-	-	-	-	- 6,733	-	-	-	-33%
07-002568 Walker Pt: WHS-Study & impleme																	
	MAIN WALL Refurbish: implementation of safety items raised at dam safet	-	10,648	5,584	-	-	-	6,875	3,605	-	-	-	3,773	1,979	-	-	55%
09MVA06 Repl. Cmn Control-Owanyilla Pump																	
	CONTROL Replacement	-	-	2,922	10,223	3,649	-	-	1,198	4,193	1,497	-	-	1,723	6,030	2,153	144%
09MVA07 Refurb Circ/Breakers- HV S'board																	
	SWITCHBOARD Refurbish switchboard	-	-	52,415	3,358	-	-	-	45,631	2,923	-	-	-	- 14,174	- 908	-	-21%
	SWITCHBOARD H.V. Refurbish Circuit Breakers - new vacuum bottles etc	-	-	-	-	-	-	-	15,210	974	-	-	-	-	-	-	-
	SWITCHBOARD Replacement	-	-	-	-	-	-	-	5,747	368	-	-	-	-	-	-	-
09MVA13 Install security fencing P'stn																	
	SECURITY FENCING AND GATES Refurbishment Fencing - mesh & barb,	-	-	8,946	-	-	-	-	16,157	-	-	-	-	- 7,211	-	-	-45%
10MVA13 Refurb Fence along Channel WPMC																	
	FENCE Refurbish Fence - refurbishment & selective replacement as requir	-	-	-	10,156	-	-	-	-	6,650	-	-	-	-	3,506	-	53%
11MVA02 Install Concrete Surrounds and C																	
	CONCRETE STRUCTURE Refurbish: Screens - check if exists and add to	-	-	-	-	9,229	-	-	-	-	6,924	-	-	-	-	2,305	33%
Grand Total		**8,142**	**48,588**	**69,867**	**23,737**	**12,878**	**11,726**	**62,116**	**87,550**	**15,108**	**8,420**	**- 3,584**	**- 13,527**	**- 17,683**	**8,629**	**4,458**	

Mareeba Irrigation Distribution

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
07MBA16 Metering UMOs																	
	UMO/T C007 BORRENSEN 1300.50ME Replacement	43,984	-	-	-	-	2,032	-	-	-	-	- 7,753	-	-	-	-	-15%
	UMO/T C012 RICCI 959.50M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C046 BOLTON 664.50M L Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C148 MATTHEWS 1972.10M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C161 VEDELAGO 45456.00M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C245 CUNNINGHAM 93.00M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C258 LOTUS GLEN 1134.50M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C325 STREAT 14679.20M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C337 VEDELAGO 46646.60M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C342 JONSSON 1277.40M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C459 TRIMBLE 1325.90M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C595 STANKOVICH Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C627 ATKINSON 10009.60M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C013 DE ZEN 1533.40M Replacement	-	-	-	-	-	1,625	-	-	-	-	-	-	-	-	-	-
	UMO/T C015 MALOBERTI 1382.30M Replacement	-	-	-	-	-	1,625	-	-	-	-	-	-	-	-	-	-
	UMO/T C026 WOODS 2126.00M Replacement	-	-	-	-	-	1,533	-	-	-	-	-	-	-	-	-	-
	UMO/T C102 ZUGNO 856.80M L Replacement	-	-	-	-	-	1,625	-	-	-	-	-	-	-	-	-	-
	UMO/T C124 MURAT 969.00M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C132 MUCCIGNAT 1685.80ML Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C139 SHABAN 106.00M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C257 LEIGHTON 38.00M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C265 GARGAN 9150.70M Replacement	-	-	-	-	-	1,533	-	-	-	-	-	-	-	-	-	-
	UMO/T C352 TUDINI 91.00M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C382 CADORIN 50084.70M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C422 ERICSON 545.60M Replacement	-	-	-	-	-	1,533	-	-	-	-	-	-	-	-	-	-
	UMO/T C579 WALLACE 34205.00M Replacement	-	-	-	-	-	2,032	-	-	-	-	-	-	-	-	-	-
	UMO/T C612 ADAMS Replacement	-	-	-	-	-	1,625	-	-	-	-	-	-	-	-	-	-
07MBA21 Refurb/Replace Amil Gates WBMC S																	
	AMIL GATE 51646M D/OVERPASS Refurbish/Replace Amil Gate - As per	64,553	-	-	-	-	12,699	-	-	-	-	- 100,530	-	-	-	-	-61%
	AMIL GATE Refurbish/Replace Amil Gate - As per Mareeba Strategies Re	-	-	-	-	-	139,685	-	-	-	-	-	-	-	-	-	-
	AMIL GATE 8224M (OVERFLOW) Refurbish/Replace Amil Gate - As per	-	-	-	-	-	12,699	-	-	-	-	-	-	-	-	-	-
07MBA28 Design SW12 Pipeline replacement																	
	LATERAL SW12 Study: Design and Preliminary desinf of SW12 as per C.M	154,489	- 202,061	-	-	-	- 165,269	216,161	-	-	-	319,758	- 418,222	-	-	-	-193%
07MBA36 Refurbish Road/Berm network																	
	ROADS WITHIN BIB Refurbish Road - high priority (refer strategy) reseal ri	89,830	-	-	-	-	5,079	-	-	-	-	84,751	-	-	-	-	1668%
08MDA15 Refurbish:Channel Reprofile WB,																	
	MAIN CHANNEL 70.71-54783.87M Channel Profiling - Changed 050211 RG	-	78,157	1,124	-	-	-	71,351	1,026	-	-	-	6,807	98	-	-	10%
Inst Meter Bench Flume-West Barron MC_A																	
	BENCH FLUME 36196.52-38040.56M Refurbish:Replacement of bolt / nut	-	-	81,144	4,971	-	-	-	101,663	6,229	-	-	-	- 20,519	- 1,257	-	-20%
Grand Total		**352,855**	**- 123,904**	**82,268**	**4,971**	**-**	**56,630**	**287,511**	**102,689**	**6,229**	**-**	**296,225**	**- 411,416**	**- 20,421**	**- 1,257**	**-**	

St George Irrigation Distribution

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
07SGA20 St George Meter ReplacE																	
	ST GEORGE DISTRIBUTION Change Out: Replacement of Channel Meters	23,054	-	-	-	-	152,384	-	-	-	-	- 129,330	-	-	-	-	-85%
08SGA21 Replace obsolete control equipme																	
	CONTROL Replacement	-	11,302	-	-	-	-	45,629	-	-	-	-	- 34,327	-	-	-	-75%
10SGA25 Install Fencing St George																	
	EMBANKMENT-RIGHT & IRRIG Refurbish:Existing Fence to Control Mover	-	-	-	47,119	-	-	-	-	44,333	-	-	-	-	2,786	-	6%
Grand Total		**23,054**	**11,302**	**-**	**47,119**	**-**	**152,384**	**45,629**	**-**	**44,333**	**-**	**- 129,330**	**- 34,327**	**-**	**2,786**	**-**	

Barker Barambah Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
06-1674 BBA Meter Replacement																	
	BARKER-BARAMBAH REG'D STREAMS Refurbish Meter Outlet - standar	28,014	290	-	-	-	75,424	781	-	-	-	- 47,410	- 491	-	-	-	-63%
06-1678 BP 03 Safe Report Imple 7.1a,c,d																	
	PIPE WORKS Refurbish: Outlet condiut 2 - 2003 dam safety inspection re	10,870	-	-	-	-	10,159	-	-	-	-	711	-	-	-	-	7%
06-1748 BPDam 03 Safety Imp 8.2a-d																	
	GUARD VALVE NO 2 (1200) Refurbish: 2003 Dam Safety Inspection 8.2a,	5,053	-	-	-	-	15,238	-	-	-	-	- 25,424	-	-	-	-	-83%
	GUARD VALVE NO 3 (900) Refurbish: 2003 Dam Safety Inspection 8.2a, b	-	-	-	-	-	15,238	-	-	-	-	-	-	-	-	-	-
07-002441 BP Dam: Study: Dam 5 yearly da																	
	BJELKE-PETERSEN DAM Study: Dam safety inspection @ 5yrs intervals	-	30,234	-	-	-	-	20,667	-	-	-	-	9,566	-	-	-	46%
Grand Total		**43,937**	**30,524**	**-**	**-**	**-**	**116,060**	**21,448**	**-**	**-**	**-**	**- 72,123**	**9,075**	**-**	**-**	**-**	

Bowen Broken Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
08BBR08 Eungella Dam - Comprehensive Ris																	
	EUNGELLA DAM Study: Risk Assessment - Overall Risk Assessment	-	11,206	15,002	1,701	-	-	12,779	17,108	1,940	-	-	- 1,573	- 2,106	- 239	-	-12%
10BBR14 Dam Safety Insp - 5 Year - Eun																	
	EUNGELLA DAM Study: 5 Yearly Dam Safety Inspection($40K); 5 yearly E	-	-	-	26,952	-	-	-	-	55,971	-	-	-	-	- 29,018	-	-52%
A710 Bowen Ri Weir Inlet &Outlet Trash																	
	TRASH SCREENS - OUTSIDE Refurbish Screen - full repaint	2,896	336	-	-	-	4,560	529	-	-	-	- 1,664	- 193	-	-	-	-36%
CLSD08BBR02 Bowen River W - Reinstate																	
	PROTECTIVE WORKS Refurbish Pwks - Reinstate gabions & Anchor Wire	-	28,980	-	-	-	-	41,334	-	-	-	-	- 12,354	-	-	-	-30%
Refurb Protection Works-Bowen River Weir																	
	PROTECTIVE WORKS Refurbish Pwks - reinstate concreted rock fill and c	-	-	141,298	-	-	-	-	26,929	-	-	-	-	114,369	-	-	425%
Regrade & Resurface Access Roads at Outl																	
	ACCESS ROAD Refurbish Road - imported material, structure repairs, stab	-	-	28,680	-	-	-	-	15,619	-	-	-	-	13,061	-	-	84%
Replc Flow Mtr Sens-Gattonvale O/S (Exp)																	
	FLOWMETER AT POWER STATION Refurbish Flow Meter - replace electr	-	-	-	21,435	-	-	-	-	11,083	-	-	-	-	- 732	-	-3%
	FLOWMETERS Refurbish Flow Meter - change out electronics	-	-	-	-	-	-	-	-	11,083	-	-	-	-	-	-	-
Grand Total		**2,896**	**40,522**	**184,980**	**50,088**	**-**	**4,560**	**54,642**	**59,656**	**80,077**	**-**	**- 1,664**	**- 14,120**	**125,324**	**- 29,989**	**-**	

Boyne Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
06-1668 Boon Dam Baulks 5yr Report 92i																	
	BAULKS Refurbish: Implement Recommendation 9i) - 2004 5-Yearly Dam S	5,765	-	-	-	-	5,079	-	-	-	-	686	-	-	-	-	14%
07-001383 Boon Dam Refurb Scr 2004 9.1b																	
	TRASHRACKS Refurbish: Implement Recommendation 9.1b) - 2004 5-Yea	34,639	326	-	-	-	30,197	285	-	-	-	4,442	42	-	-	-	15%
Inspec- 5 Year Dam Safety-Boondooma Dam																	
	DAM WALL Study: Dam Safety 5 yearly inspection	-	-	39,292	821	-	-	-	46,451	971	-	-	-	- 7,159	- 150	-	-15%
Refurbish Baulks - Boondooma Dam																	
	BAULKS Refurbish: Implement Recommendation 9;2a) - 2004 5-Yearly Da	-	-	53,931	-	-	-	-	10,772	-	-	-	-	- 48,400	-	-	-47%
	BAULKS Refurbish: Implement Recommendation 9.2c),d),e),and f) - 2004 5	-	-	-	-	-	-	-	91,559	-	-	-	-	-	-	-	-
Grand Total		**40,404**	**326**	**93,223**	**821**	**-**	**35,277**	**285**	**148,782**	**971**	**-**	**5,128**	**42**	**- 55,559**	**- 150**	**-**	

Bundaberg Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
07-002508 Ben &erson: Refurbish Gate - c																	
	FIXED WHEEL GATE NO1 Refurbish Gate - corrosion, rope, seals & actua	-	22,259	12,114	-	-	-	13,578	7,390	-	-	-	8,681	4,724	-	-	64%
07-002509 Ben &erson: Refurbish: Remove																	
	REGULATOR GATE Refurbish Gate - remove, repaint, anodes & bearings,	-	46,537	18,512	-	-	-	14,959	5,950	-	-	-	9,141	3,636	-	-	24%
	REGULATOR GATE Refurbish Gate - remove, repaint, anodes & bearings,	-	-	-	-	-	-	11,219	4,463	-	-	-	-	-	-	-	-
	REGULATOR GATE Refurbish Gate - remove, repaint, anodes & bearings,	-	-	-	-	-	-	11,219	4,463	-	-	-	-	-	-	-	-
10BIA10 Refurb 15 shutters Ben A Barrage																	
	COLLAPSIBLE STEEL SHUTTERS (2) Refurbish Shutters - remove 10 shu	-	-	-	34,223	-	-	-	-	60,958	-	-	-	-	- 26,735	-	-44%
10BIA14 Refurb fxd wheel gate #4&5 - BAB																	
	FIXED WHEEL GATE NO.4 Refurbish Gate - corrosion, rope, seals & actu	-	-	-	52,135	735	-	-	-	21,870	308	-	-	-	8,394	118	19%
	FIXED WHEEL GATE NO.5 Refurbish Gate - corrosion, rope, seals & actu	-	-	-	-	-	-	-	-	21,870	308	-	-	-	-	-	-
Refur Fixed Wheel Gate2Ben A- Barrage																	
	FIXED WHEEL GATE NO.2 Refurbish Gate - corrosion, rope, seals & actu	-	-	22,737	-	-	-	-	21,543	-	-	-	-	1,194	-	-	6%
Refur Fixed Wheel Gate3 Ben A- Barrage																	
	FIXED WHEEL GATE NO.3 Refurbish Gate - corrosion, rope, seals & actu	-	-	20,515	-	-	-	-	21,543	-	-	-	-	- 1,028	-	-	-5%
Grand Total		**-**	**68,796**	**73,879**	**86,358**	**735**	**-**	**50,975**	**65,352**	**104,699**	**617**	**-**	**17,822**	**8,527**	**- 18,341**	**118**	

Burdekin Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
06-006144 BFD TWS Pump 1&2 Refurb																	
	PUMP NO 1 Refurbish Pump - bearing & mechanical seal, etc	14,872	-	-	-	-	20,318	-	-	-	-	- 438,216	-	-	-	-	-97%
	PUMP NO 1 Refurbish Pump - corrosion, seals, wearing parts etc as requ	-	-	-	-	-	25,397	-	-	-	-	-	-	-	-	-	-
	PUMP NO 1 Refurbish Pump - Seals, bearings, wear rings etc	-	-	-	-	-	20,318	-	-	-	-	-	-	-	-	-	-
	PUMP NO 1 Replacement	-	-	-	-	-	20,318	-	-	-	-	-	-	-	-	-	-
	PUMP NO 2 Replacement	-	-	-	-	-	20,318	-	-	-	-	-	-	-	-	-	-
	PUMP NO 2 Refurbish Pump - bearing & mechanical seal, etc	-	-	-	-	-	16,254	-	-	-	-	-	-	-	-	-	-
	PUMP NO 2 Refurbish Pump - bearing replacement, seals, rings, slieves, i	-	-	-	-	-	66,033	-	-	-	-	-	-	-	-	-	-
	PUMP NO 2 Refurbish Pump - corrosion, seals, wearing parts etc as requ	-	-	-	-	-	20,318	-	-	-	-	-	-	-	-	-	-
	PUMP NO 2 Refurbish Pump - seals, rings, corrosion, patch paint etc	-	-	-	-	-	20,318	-	-	-	-	-	-	-	-	-	-
	PUMP NO.2 Refurbish Pump - refurbish seals, impeller, bearings - conditio	-	-	-	-	-	203,179	-	-	-	-	-	-	-	-	-	-
	PUMP NO 1 Refurbish Pump - seals, rings, corrosion, patch paint etc	-	-	-	-	-	20,318	-	-	-	-	-	-	-	-	-	-
06-004201 Gantry Crane Refurb Winches																	
	GANTRY CRANE Refurbish Winches - drums, ropes, drives etc to ensure t	10,274	4,852	-	-	-	5,550	2,621	-	-	-	4,724	2,231	-	-	-	85%
07-007171 B Falls Dam O'haul Radial Gate																	
	LEFT HAND RADIAL GATE Refurbish: paint, bearings	-	18,374	19,684	-	-	-	8,154	8,735	-	-	-	10,220	10,949	-	-	125%
10BRI01-BFD - Pole & Aerial Treatment																	
	HIGH VOLTAGE SYSTEM Refurbish: Pole & aerial maintenance, 5yearly b	-	-	-	25,751	399	-	-	-	27,302	423	-	-	-	- 1,551	- 24	-6%
A716 BFD Radial Gate Seals 05-001377																	
	RIGHT HAND RADIAL GATE Refurbish: paint, bearings	11,765	-	-	-	-	16,254	-	-	-	-	- 4,489	-	-	-	-	-28%
Burdekin Falls Dam 5 Yearly Dam Safety																	
	BURDEKIN FALLS DAM AMTD 159.3 Study:5 Yearly Dam Safety Inspecti	13,664	8,053	-	-	-	32,161	18,954	-	-	-	- 18,497	- 10,901	-	-	-	-58%
Grand Total		**50,576**	**31,279**	**19,684**	**25,751**	**399**	**507,054**	**29,729**	**8,735**	**27,302**	**423**	**- 456,478**	**1,550**	**10,949**	**- 1,551**	**- 24**	

Callide Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
10CVA01-Undertake 5 Yearly Dam Safety In																	
	CALLIDE DAM Study: Carry out five yearly Dam Safety inspection	-	-	-	24,927	2,563	-	-	-	43,375	4,460	-	-	-	- 18,448	- 1,897	-43%
10CVA05-Undertake 5 Yearly Dam Safety In																	
	KROOMBIT DAM Five-yearly Dam Safety inspection *	-	-	-	9,469	2,459	-	-	-	38,145	9,905	-	-	-	- 28,676	- 7,446	-75%
11CVA02 Replace Switchboard - Main Valve																	
	SWITCHBOARD-VALVE HOUSE Replacement	-	-	-	-	2,854	-	-	-	-	34,619	-	-	-	-	- 31,765	-92%
BI1027 Callide Diversion Channel - EXP																	
	CALLIDE DIVERSION CHANNEL Refurbish Cross Drains - stabilise, clear	-	6,982	-	-	-	-	12,400	-	-	-	-	- 5,419	-	-	-	-44%
Callide V'Hse Replace sump pump BI808																	
	SUMP PUMP ISOLATOR CUB NO2 Replacement	3,857	-	-	-	-	10,159	-	-	-	-	- 6,302	-	-	-	-	-62%
Install & Refurb Fencing - Callide DC																	
	CALLIDE DIVERSION CHANNEL Refurbish: Installation of fencing and mai	-	-	53,829	3,653	-	-	-	30,315	2,058	-	-	-	23,514	1,596	-	78%
Repl Ladders,Covers,K/boards-Callide DIT																	
	INLET TOWER Callide Dam: Refurbish Callide Dam Inlet Tower - Replace l	-	-	126	11,829	228	-	-	343	32,299	623	-	-	- 217	- 20,469	- 395	-63%
Grand Total		**3,857**	**6,982**	**53,955**	**49,879**	**8,104**	**10,159**	**12,400**	**30,658**	**115,876**	**49,607**	**- 6,302**	**- 5,419**	**23,297**	**- 65,998**	**- 41,503**	

Chinchilla Weir Water Supply

No matching projects.

Cunnamulla Weir Water Supply

No matching projects.

Dawson Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
09DVA18 Pump 2 MOS repairs																	
	PUMP NO2 Refurbish Pump; Not in 03 budget so moved out a year*	-	-	-	26,036	-	-	-	-	6,001	-	-	-	-	20,035	-	334%
10DVA02-Install Concrete Cutof & Extend																	
	CONC/STEEL PILED WEIR Refurbish: Replace approx. 100m of joint seal	-	-	-	5,941	-	-	-	-	12,003	-	-	-	-	- 6,062	-	-51%
11DVA10 Replace Communications and Contr																	
	REMOTE TELEMETRY UNIT Change Out - major problems with radio, pos	-	-	-	-	17,880	-	-	-	-	6,241	-	-	-	-	11,639	186%
Install Signs as per Manual-Dawson River																	
	GIBBER GUNYAH IRRIGATION AREA Install warning signs to channel are	-	-	18,107	352	-	-	-	16,994	330	-	-	-	1,113	22	-	7%
Grand Total		**-**	**-**	**18,107**	**32,328**	**17,880**	**-**	**-**	**16,994**	**18,334**	**6,241**	**-**	**-**	**1,113**	**13,994**	**11,639**	

Eton Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
06-006325 PSTN 1, 2, 3 New Metering																	
	MIRANI DIV PUMP STATION 1 Enhance:Rising Main Metering per Flow M	117,510	19,416	-	-	-	36,705	6,065	-	-	-	44,100	7,286	-	-	-	60%
	RISING MAIN PUMP STN NO 2 Enhance:Rising Main Metering per Flow M	-	-	-	-	-	36,705	6,065	-	-	-	-	-	-	-	-	-
08ETO10 Mirani Diversion Channel-Cross																	
	MIRANI DIVERSION CHANNEL Study: Mirani PS Condition Assessment	-	25,791	-	-	-	-	20,667	-	-	-	-	5,124	-	-	-	25%
08ETO23 Mirani PS3 Pump 2 Overhaul																	
	PUMP Refurbish: Overhaul every 10 yrs.	-	33,443	-	-	-	-	41,334	-	-	-	-	- 7,891	-	-	-	-19%
10ETO08 Repair Sink Holes - KD																	
	MAIN WALL Refurbish: Repair sink holes	-	-	-	-	11,852	-	-	-	-	11,540	-	-	-	-	312	3%
10ETO35Replace KD O'let/W S'boards(1&3)																	
	SWITCH BOARD Replacement	-	-	-	57,889	215	-	-	-	46,033	171	-	-	-	11,857	44	26%
Grand Total		**117,510**	**78,650**	**-**	**57,889**	**12,066**	**73,411**	**74,131**	**-**	**46,033**	**11,710**	**44,100**	**4,519**	**-**	**11,857**	**356**	

Lower Fitzroy Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
Refurb Hydraulic Syst-Eden Bann Fishlock																	
	HYDRAULIC SYSTEM Refurbish Hyd - replace minor valves, service cylind	-	-	22,084	-	-	-	-	11,541	-	-	-	-	10,543	-	-	91%
Refurbish: Replace key and lock system -																	
	BUILDING Refurbish Bld - incl amenities, roof, security etc	2,395	-	-	-	-	5,335	-	-	-	-	- 2,940	-	-	-	-	-55%
Grand Total		**2,395**	**-**	**22,084**	**-**	**-**	**5,335**	**-**	**11,541**	**-**	**-**	**- 2,940**	**-**	**10,543**	**-**	**-**	

Lower Mary Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
06-1759 Tinana Upgrade Meter Installs																	
	TINANA CREEK REGULATED STREAM Refurbish: Upgrade meter installa	19,322	1,107	-	-	-	46,162	2,646	-	-	-	- 26,840	- 1,538	-	-	-	-58%
06-1760 Lower Mary Meter Replace																	
	OWANYILLA DIVERSION CHANNEL Refurbish Meter outlets - Lower Mary	20,894	-	-	-	-	43,175	-	-	-	-	- 22,281	-	-	-	-	-52%
07-002547 Tinana Creek: Refurbish/upgrad																	
	DISCHARGE VALVE Refurbish: Discharge valve	-	3,847	-	-	-	-	5,167	-	-	-	-	- 11,654	-	-	-	-75%
	REFLUX VALVE Refurbish Valve - corrosion, seal, bearings	-	-	-	-	-	-	10,334	-	-	-	-	-	-	-	-	-
07-002548 Mary River Barrage: Replace me																	
	MARY RIVER BARRAGE REG. STREAM Replace meters - Mary River Ba	-	1,973	-	-	-	-	72,335	-	-	-	-	- 70,362	-	-	-	-97%
Grand Total		**40,216**	**6,927**	**-**	**-**	**-**	**89,337**	**90,481**	**-**	**-**	**-**	**- 49,121**	**- 83,554**	**-**	**-**	**-**	

Macintyre Brook Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
11MAB06 5 YR DAM SAFETY INSPECTION																	
	COOLMUNDA DAM Study: Dam safety inspection	-	-	-	-	24,402	-	-	-	-	34,619	-	-	-	-	- 10,217	-30%
IPS07MAB05 Inst temporary diversion pipe																	
	PIPEWORK Install diversion pipe from cone valve to downstream for future	24,673	-	- 28,996	-	-	- 375,018	-	440,722	-	-	399,691	-	- 469,718	-	-	-107%
IPS07MAB06 Replace asbestos Comp Swtchbd																	
	SWITCHBOARD Replacement	34,457	- 350	-	-	-	30,784	- 313	-	-	-	3,673	- 37	-	-	-	12%
IPS07MAB09 Full overhaul 760 Cone valve																	
	760 CONE VALVE Refurbish: Removal of yolk; Remove rust from pins ;Sar	12,939	-	-	-	-	30,477	-	-	-	-	- 17,538	-	-	-	-	-58%
IPS08MAB11 Refurbish: Major Refurb of We																	
	ALL DRAINS LEFT BANK NFA Whestone Weir Refurbishment	-	349,835	600,521	173,961	864	-	199,194	341,933	99,052	492	-	150,641	258,588	74,908	372	76%
Refurbish Spillway Regulating Gate D/S F																	
	REGULATING GATE 02 Refurbish: Repaint all U/Sand D/S Faces ($30K P	-	-	57,465	-	-	-	-	64,630	-	-	-	-	- 7,164	-	-	-11%
Grand Total		**72,069**	**349,485**	**628,990**	**173,961**	**25,266**	**- 313,757**	**198,881**	**847,285**	**99,052**	**35,111**	**385,826**	**150,604**	**- 218,295**	**74,908**	**- 9,845**	

Maranoa Water Supply

No matching projects.

Mareeba Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
07MBA03 Scheme Scada Upgrade																	
	SCADA TELEMETRY AND CONTROLS Change Out Electronics - replace	32,872	-	-	-	-	10,159	-	-	-	-	- 58,558	-	-	-	-	-64%
	SCADA TELEMETRY AND CONTROLS Change Out Electronics - replace	-	-	-	-	-	81,271	-	-	-	-	-	-	-	-	-	-
11MDA02 Rectify issues from 2008 5 Year																	
	TINAROO DAM SYSTEM Study - 5 yearly Dam Safety Inspection ; 2008 s	-	-	-	-	5,057	-	-	-	-	57,699	-	-	-	-	- 52,641	-91%
Grand Total		**32,872**	**-**	**-**	**-**	**5,057**	**91,430**	**-**	**-**	**-**	**57,699**	**- 58,558**	**-**	**-**	**-**	**- 52,641**	

Nogoa Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
BI1060 Fairbairn Dam - Undertake 5-yearl																	
	FAIRBAIRN DAM AMTD (685.60) Study - Dam Safety Inspection***	-	36,478	9,822	597	-	-	47,060	12,671	771	-	-	- 10,582	- 2,849	- 173	-	-22%
Grand Total		**-**	**36,478**	**9,822**	**597**	**-**	**-**	**47,060**	**12,671**	**771**	**-**	**-**	**- 10,582**	**- 2,849**	**- 173**	**-**	

Pioneer Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
06-005254 TD Risk Assessment Spillway																	
	TEEMBURRA DAM MAIN WALL Study: Risk Assessment - Overtopping a	10,660	11,797	19,634	-	-	7,967	8,818	14,675	-	-	2,692	2,979	4,958	-	-	34%
11PIO04 Conduct 5 Year Dam Safety Inspec																	
	TEEMBURRA DAM Study: 5 Yearly Dam Safety Inspection	-	-	-	-	56,804	-	-	-	-	57,699	-	-	-	-	- 895	-2%
A783 Marian Weir Outlet Works05-001444																	
	OUTLET WORKS Enhancement: Enlarge the outletworks - ROP Operation	3,864	34,647	97,258	1,143,316	13,059	528	4,736	13,295	156,284	1,785	3,336	29,911	83,964	987,033	11,274	632%
Grand Total		**14,524**	**46,443**	**116,892**	**1,143,316**	**69,863**	**8,496**	**13,554**	**27,970**	**156,284**	**59,484**	**6,028**	**32,890**	**88,922**	**987,033**	**10,379**	

Proserpine Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
06-005255 PFD Overtop&Spillway Upgde cos																	
	SPILLWAY Study: Risk Assessment - Overtopping and Spillway Upgrade	10,963	22,070	11,593	-	-	7,664	15,430	8,105	-	-	3,299	6,641	3,488	-	-	43%
08PRO01 Peter Faust Dam - 5 Yearly Dam S																	
	PETER FAUST DAM Study: 5 yearly dam inspection	-	14,108	10,750	-	-	-	20,895	15,920	-	-	-	- 6,786	- 5,171	-	-	-32%
A763 PFD Refurb Paint Seal GV2 05-001424																	
	900 DIA B/FLY GUARD VALVE Refurbish: Patch paint and seal @ 10 yrs.	19,219	-	-	-	-	10,159	-	-	-	-	9,060	-	-	-	-	89%
Grand Total		**30,182**	**36,179**	**22,342**	**-**	**-**	**17,823**	**36,324**	**24,025**	**-**	**-**	**12,359**	**- 145**	**- 1,682**	**-**	**-**	

St George Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
07SGA05 BMD Construction of LL Pump St																	
	ST. GEORGE PUMP STATION Enhance: Construction of New Pump Stati	199,780	-	538	-	-	303,996	-	819	-	-	- 104,216	-	- 281	-	-	-34%
07SGA06 BMD Spillway and Risk Assessment																	
	SPILLWAY BMD Risk Assessment - Overtopping and spillway upgrade	22,668	5,940	15,600	-	-	15,984	4,189	11,000	-	-	6,683	1,751	4,600	-	-	42%
08SGA09 Refurbish steel gantry beam on J																	
	MAIN WALL Refurbishment; Blast and paint stell gantry beam - 2003 5 yrly	-	10,114	5,121	10,528	-	-	21,035	10,651	21,896	-	-	- 10,921	- 5,530	- 11,368	-	-52%
08SGA10 Refurbish & replace obselete com																	
	SWITCHBOARD Refurbish: Part replacement of components due to obsele	-	21,178	-	-	-	-	46,501	-	-	-	-	- 25,323	-	-	-	-54%
08SGA17 5 Year Dam Safety Inspection at																	
	BEARDMORE DAM Study: Dam Safety inspection	-	17,439	-	-	-	-	20,667	-	-	-	-	- 3,228	-	-	-	-16%
10SGA10 BMD SG09 - Blast and Paint Down																	
	GATE STRUCTURE Refurbish:Downstram face Full blast and paint - regul	-	-	-	69,742	-	-	-	-	532,000	-	-	-	-	- 462,258	-	-87%
Refurbish Gantry Crane (see Condition As																	
	GANTRY CRANE Refurbish: Paint Steel work; Confirmed through condition	-	-	36,777	-	-	-	-	75,401	-	-	-	-	- 38,625	-	-	-51%
Grand Total		**222,448**	**54,671**	**58,036**	**80,269**	**-**	**319,980**	**92,392**	**97,872**	**553,895**	**-**	**- 97,532**	**- 37,721**	**- 39,836**	**- 473,626**	**-**	

Three Moon Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
BI1091 Avis Weir - repair rock mattress																	
	AVIS WEIR 46.8KM Refurbish: Investigate uplift and restore Bench Mark	-	2,696	-	-	-	-	5,167	-	-	-	-	- 2,471	-	-	-	-48%
BI751 install Weir YOUL-DIV Prior Yr																	
	YOULAMBIE DIVERSION CHANNEL Refurbish Channel - General stabilisa	2,567	-	-	-	-	5,079	-	-	-	-	- 2,512	-	-	-	-	-49%
Inspection -5 Year Dam Safety- Cania Dam																	
	CANIA DAM AMTD 110.1 Study - Dam safety inspection - left at original	-	-	22,034	7,432	48	-	-	35,639	12,021	78	-	-	- 13,606	- 4,589	- 30	-38%
Mulgildie Weir Replace inlet screen																	
	TRASH SCREENS Refurbish: Remove Clean and inspect. Patch paint	3,973	-	-	-	-	5,079	-	-	-	-	- 1,107	-	-	-	-	-22%
Grand Total		**6,540**	**2,696**	**22,034**	**7,432**	**48**	**10,159**	**5,167**	**35,639**	**12,021**	**78**	**- 3,619**	**- 2,471**	**- 13,606**	**- 4,589**	**- 30**	

Upper Burnett Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
06-001785 Wur Dam Comp Safe Inspect																	
	WURUMA DAM AMTD 23.0 Study - Dam safety Inspection	17,177	-	-	-	-	30,477	-	-	-	-	- 13,299	-	-	-	-	-44%
06-1673 Wuruma Dam Spillway Risk Assess																	
	MAIN WALL Overall Spillway Risk Assessment	39,530	11,377	-	-	-	23,756	6,837	-	-	-	15,775	4,540	-	-	-	66%
06-1766 UPB Replace Meter Outlets																	
	RIVER OFFTAKES UPPER BURNETT Refurbish Meter outlets - Upper Bur	18,416	-	-	-	-	345,403	-	-	-	-	- 326,988	-	-	-	-	-95%
07-002569 JG Weir: Implement inspection																	
	JOHN GOLEBY WEIR Implement recommendations from 5 yrly safety insp	-	5,648	3,247	-	-	-	6,661	3,829	-	-	-	- 1,012	- 582	-	-	-15%
Grand Total		**75,123**	**17,025**	**3,247**	**-**	**-**	**399,636**	**13,497**	**3,829**	**-**	**-**	**- 324,513**	**3,528**	**- 582**	**-**	**-**	

Upper Condamine Water Supply

Actual	Forecast	Actual, Nominal $ 2007	2008	2009	2010	2011	Forecast, Nominal $ 2007	2008	2009	2010	2011	$ Variance, Nominal $ 2007	2008	2009	2010	2011	% Variance All Years
10UCO09 Paint U/s Face Gate 5 - Leslie																	
	RADIAL GATE 5 Refurbish: Paint upstream face	-	-	-	32,533	-	-	-	-	33,250	-	-	-	-	- 717	-	-2%
10UCO11 Foundation Drains - Leslie Dam																	
	LESLIE DAM STRUCTURE Clean out foundation drain and pressure test fo	-	-	-	11,560	-	-	-	-	11,083	-	-	-	-	477	-	4%
11UCO10 REPLACE LEAKING RAM SEALS																	
	HYDRAULIC SYSTEM-MAIN Refurbish: replacement of ram seals, oil etc,	-	-	-	-	37,906	-	-	-	-	79,624	-	-	-	-	- 41,718	-52%
Inspection- 5 Year Dam Safety-Leslie Dam																	
	LESLIE DAM Study: Dam safety inspection	-	-	8,197	5,587	-	-	-	19,439	13,249	-	-	-	- 11,241	- 7,662	-	-58%
IPS07UCO08 Balst & Paint LHS 914mm River																	
	OUTLET WORKS - RIVER SUPPLY Refurbish: Balst and paint the two 914	56,140	-	-	-	-	60,954	-	-	-	-	- 4,814	-	-	-	-	-8%
IPS07UCO09 Leslie: Paint Upstream Face																	
	RADIAL GATE 3 Refurbish: Paint upstream face	27,148	-	-	-	-	30,477	-	-	-	-	- 3,328	-	-	-	-	-11%
IPS07UCO17 Overhaul Control Syst & ESWB																	
	CONTROL EQUIPMENT Enhancement: Dependent on study: Overhaul cor	54,477	-	-	-	-	101,589	-	-	-	-	- 47,112	-	-	-	-	-46%
IPS07UCO20 Purchase/Rplc Meters Nth Bnch																	
	UPPER CONDAMINE RIVER Change Out: Annual allowance to purchase a	30,630	-	-	-	-	71,112	-	-	-	-	- 60,800	-	-	-	-	-66%
	WATER METERS Change Out: Annual allowance to purchase and change	-	-	-	-	-	20,318	-	-	-	-	-	-	-	-	-	-
IPS08UCO02 Enchancement: Replace guard v																	
	915 GUARD VALVE - R/H Replace gate valve with butterfly valve	-	119,990	-	-	-	-	31,001	-	-	-	-	57,989	-	-	-	94%
	915 GUARD VALVE - L/H Replace gate valve with butterfly valve	-	-	-	-	-	-	31,001	-	-	-	-	-	-	-	-	-
IPS08UCO03 Refurbish: Blast & paint the																	
	RADIAL GATES 1- 7 Abrasive blast and patch paint D/S side of gate, majo	-	20,408	-	-	-	-	31,001	-	-	-	-	- 25,060	-	-	-	-55%
	SYPHON UNIT 2 (CENTRE UNIT) Refurbish: Blast and paint	-	-	-	-	-	-	7,233	-	-	-	-	-	-	-	-	-
	SYPHON UNIT 3 (U/S UNIT) Refurbish: Blast and paint	-	-	-	-	-	-	7,233	-	-	-	-	-	-	-	-	-
IPS08UCO07 Replace 685 Gate Valve & Refu																	
	685 GATE VALVE - EL458.20 Refurbish Valve - 2 per year @ $10K each a	-	13,330	-	-	-	-	10,334	-	-	-	-	- 7,337	-	-	-	-36%
	685 GATE VALVE - EL461.48 Refurbish Valve - 2 per year @ $10K each a	-	-	-	-	-	-	10,334	-	-	-	-	-	-	-	-	-
IPS08UCO11 Desilt North Branch																	
	EMBANKMENT Refurbish: Desilting of wier and patchpainting of trashscre	-	21,272	-	-	-	-	31,001	-	-	-	-	- 9,729	-	-	-	-31%
Refur Crane Electrical Syste-Leslie Dam																	
	GANTRY CRANE Refurbish: total rehash of electrical system - not motors	-	-	7,308	-	-	-	-	43,086	-	-	-	-	- 35,778	-	-	-83%
Grand Total		**168,396**	**175,000**	**15,506**	**49,680**	**37,906**	**284,450**	**159,137**	**62,525**	**57,582**	**79,624**	**- 116,054**	**15,863**	**- 47,019**	**- 7,902**	**- 41,718**	

APPENDIX C

Indicative and Preliminary ARR Balances Workings on a Service Contract Basis (Irrigation only)

2001

	Opening Balance	Cash Spend	Revenue	Revenue Transfer	Closing Balance
Bundaberg Irrigation Distribution	0	831,931	808,336	-108,820	-132,415
Burdekin Irrigation Distribution	0	209,466	605,997	-86,961	309,569
Dawson Irrigation Distribution	0	451,083	403,430	-134,578	-182,231
Emerald Irrigation Distribution	0	149,062	209,951	-80,422	-19,533
Eton Irrigation Distribution	0	93,771	86,252	-38,361	-45,880
Lower Mary Irrigation Distribution	0	27,105	24,526	-5,631	-8,210
Mareeba Irrigation Distribution	0	302,038	899,152	-196,434	400,681
St George Irrigation Distribution	0	100,651	215,963	-119,360	-4,048
Barker Barambah Water Supply	0	93,916	61,913	0	-32,003
Bowen Broken Water Supply	0	15,128	20,403	0	5,275
Boyne Water Supply	0	35,755	37,840	0	2,085
Bundaberg Water Supply	0	293,243	284,926	108,820	100,503
Burdekin Water Supply	0	64,993	188,029	86,961	209,997
Callide Water Supply	0	134,246	108,311	0	-25,934
Chinchilla Weir Water Supply	0	0	20,034	0	20,034
Cunnamulla Weir Water Supply	0	0	1,300	0	1,300
Dawson Water Supply	0	183,255	163,896	134,578	115,219
Eton Water Supply	0	139,499	128,314	38,361	27,176
Lower Fitzroy Water Supply	0	38,235	33,019	0	-5,216
Lower Mary Water Supply	0	12,843	11,621	5,631	4,409
Macintyre Brook Water Supply	0	45,467	101,052	0	55,584
Maranoa Water Supply	0	0	1,123	0	1,123
Mareeba Water Supply	0	78,656	234,157	196,434	351,934
Nogoa Water Supply	0	223,113	314,249	80,422	171,559
Pioneer Water Supply	0	50,084	209,968	0	159,884
Proserpine Water Supply	0	10,735	40,770	0	30,035
St George Water Supply	0	123,754	265,535	119,360	261,141
Three Moon Water Supply	0	161,709	53,507	0	-108,202
Upper Burnett Water Supply	0	115,924	117,553	0	1,629
Upper Condamine Water Supply	0	88,800	177,921	0	89,121
Total	**0**	**4,074,459**	**5,829,045**	**-0**	**1,754,586**

2002

	Opening Balance	Cash Spend	Revenue	Revenue Transfer	Closing Balance
Bundaberg Irrigation Distribution	-132,415	668,398	948,214	-127,651	19,750
Burdekin Irrigation Distribution	309,569	1,364,553	1,032,291	-148,135	-170,828
Dawson Irrigation Distribution	-182,231	0	519,299	-173,230	163,837
Emerald Irrigation Distribution	-19,533	372,752	364,589	-139,657	-167,352
Eton Irrigation Distribution	-45,880	140,086	154,155	-68,561	-100,372
Lower Mary Irrigation Distribution	-8,210	127,579	29,317	-6,731	-113,204
Mareeba Irrigation Distribution	400,681	256,625	1,258,438	-274,925	1,127,568
St George Irrigation Distribution	-4,048	169,806	301,550	-166,663	-38,966
Barker Barambah Water Supply	-32,003	133,448	84,966	0	-80,484
Bowen Broken Water Supply	5,275	26,203	39,085	0	18,157
Boyne Water Supply	2,085	56,375	62,862	0	8,572
Bundaberg Water Supply	100,503	280,390	334,231	127,651	281,995
Burdekin Water Supply	209,997	70,930	320,299	148,135	607,502
Callide Water Supply	-25,934	172,738	131,478	0	-67,194
Chinchilla Weir Water Supply	20,034	17,490	27,984	0	30,529
Cunnamulla Weir Water Supply	1,300	0	1,362	0	2,661
Dawson Water Supply	115,219	55,460	210,968	173,230	443,957
Eton Water Supply	27,176	212,888	229,330	68,561	112,180
Lower Fitzroy Water Supply	-5,216	0	239,517	0	234,301
Lower Mary Water Supply	4,409	0	13,891	6,731	25,031
Macintyre Brook Water Supply	55,584	85,032	156,298	0	126,850
Maranoa Water Supply	1,123	0	1,500	0	2,623
Mareeba Water Supply	351,934	549,179	327,722	274,925	405,402
Nogoa Water Supply	171,559	158,483	545,708	139,657	698,440
Pioneer Water Supply	159,884	635,480	318,124	0	-157,472
Proserpine Water Supply	30,035	110,350	64,027	0	-16,288
St George Water Supply	261,141	508,381	370,768	166,663	290,190
Three Moon Water Supply	-108,202	119,338	63,208	0	-164,332
Upper Burnett Water Supply	1,629	76,017	155,182	0	80,794
Upper Condamine Water Supply	89,121	197,376	210,121	0	101,866
Total	**1,754,586**	**6,565,357**	**8,516,484**	**-0**	**3,705,713**

2003

	Opening Balance	Cash Spend	Revenue	Revenue Transfer	Closing Balance
Bundaberg Irrigation Distribution	19,750	1,032,190	840,875	-113,201	-284,766
Burdekin Irrigation Distribution	-170,828	990,032	1,069,082	-153,415	-245,192
Dawson Irrigation Distribution	163,837	223,865	552,141	-184,186	307,927
Emerald Irrigation Distribution	-167,352	427,242	401,425	-153,767	-346,936
Eton Irrigation Distribution	-100,372	123,086	161,095	-71,648	-134,011
Lower Mary Irrigation Distribution	-113,204	94,115	35,428	-8,134	-180,025
Mareeba Irrigation Distribution	1,127,568	954,087	1,331,659	-290,922	1,214,218
St George Irrigation Distribution	-38,966	260,459	286,834	-158,529	-171,121
Barker Barambah Water Supply	-80,484	67,870	84,159	0	-64,196
Bowen Broken Water Supply	18,157	67,306	73,210	0	24,060
Boyne Water Supply	8,572	91,240	220,080	0	137,412
Bundaberg Water Supply	281,995	263,177	296,395	113,201	428,414
Burdekin Water Supply	607,502	339,672	331,715	153,415	752,959
Callide Water Supply	-67,194	168,015	182,529	0	-52,680
Chinchilla Weir Water Supply	30,529	-2,604	25,653	0	58,786
Cunnamulla Weir Water Supply	2,661	0	2,015	0	4,676
Dawson Water Supply	443,957	65,198	224,310	184,186	787,255
Eton Water Supply	112,180	129,867	239,654	71,648	293,614
Lower Fitzroy Water Supply	234,301	267,905	48,172	0	14,568
Lower Mary Water Supply	25,031	24,582	16,786	8,134	25,370
Macintyre Brook Water Supply	126,850	88,879	188,788	0	226,759
Maranoa Water Supply	2,623	0	1,577	0	4,200
Mareeba Water Supply	405,402	172,496	346,790	290,922	870,617
Nogoa Water Supply	698,440	118,080	600,843	153,767	1,334,970
Pioneer Water Supply	-157,472	348,487	350,774	0	-155,184
Proserpine Water Supply	-16,288	41,137	70,409	0	12,984
St George Water Supply	290,190	148,886	352,674	158,529	652,507
Three Moon Water Supply	-164,332	38,091	63,912	0	-138,511
Upper Burnett Water Supply	80,794	92,221	151,678	0	140,250
Upper Condamine Water Supply	101,866	186,439	183,033	0	98,460
Total	**3,705,713**	**6,822,021**	**8,733,693**	**-0**	**5,617,385**

2004

	Opening Balance	Cash Spend	Revenue	Revenue Transfer	Closing Balance
Bundaberg Irrigation Distribution	-284,766	1,288,235	1,233,577	-166,067	-505,491
Burdekin Irrigation Distribution	-245,192	1,244,568	1,005,739	-144,325	-628,346
Dawson Irrigation Distribution	307,927	69,239	609,172	-203,211	644,649
Emerald Irrigation Distribution	-346,936	835,726	431,819	-165,409	-916,252
Eton Irrigation Distribution	-134,011	140,682	152,608	-67,873	-189,958
Lower Mary Irrigation Distribution	-180,025	72,423	33,301	-7,646	-226,793
Mareeba Irrigation Distribution	1,214,218	1,681,244	1,210,853	-264,530	479,298
St George Irrigation Distribution	-171,121	154,076	333,379	-184,254	-176,072
Barker Barambah Water Supply	-64,196	288,098	80,650	0	-271,644
Bowen Broken Water Supply	24,060	92,342	101,239	0	32,958
Boyne Water Supply	137,412	89,446	127,131	0	175,097
Bundaberg Water Supply	428,414	422,109	434,817	166,067	607,188
Burdekin Water Supply	752,959	437,501	312,061	144,325	771,844
Callide Water Supply	-52,680	435,255	170,629	0	-317,306
Chinchilla Weir Water Supply	58,786	30,831	25,801	0	53,756
Cunnamulla Weir Water Supply	4,676	24,408	1,806	0	-17,926
Dawson Water Supply	787,255	115,804	247,480	203,211	1,122,142
Eton Water Supply	293,614	472,947	227,029	67,873	115,570
Lower Fitzroy Water Supply	14,568	123,240	36,608	0	-72,064
Lower Mary Water Supply	25,370	47,160	15,779	7,646	1,635
Macintyre Brook Water Supply	226,759	128,804	157,957	0	255,911
Maranoa Water Supply	4,200	15,581	1,734	0	-9,648
Mareeba Water Supply	870,617	190,003	315,330	264,530	1,260,474
Nogoa Water Supply	1,334,970	764,254	646,335	165,409	1,382,459
Pioneer Water Supply	-155,184	436,739	264,064	0	-327,859
Proserpine Water Supply	12,984	27,711	68,876	0	54,149
St George Water Supply	652,507	236,141	409,903	184,254	1,010,523
Three Moon Water Supply	-138,511	55,125	68,922	0	-124,714
Upper Burnett Water Supply	140,250	210,633	195,648	0	125,265
Upper Condamine Water Supply	98,460	133,477	183,275	0	148,258
Total	**5,617,385**	**10,263,801**	**9,103,519**	**-0**	**4,457,104**

2005

	Opening Balance	Cash Spend	Revenue	Revenue Transfer	Closing Balance
Bundaberg Irrigation Distribution	-505,491	1,266,855	1,396,906	-188,055	-563,495
Burdekin Irrigation Distribution	-628,346	1,355,605	1,163,670	-166,989	-987,269
Dawson Irrigation Distribution	644,649	197,004	610,037	-203,499	854,183
Emerald Irrigation Distribution	-916,252	483,494	448,977	-171,981	-1,122,750
Eton Irrigation Distribution	-189,958	150,801	150,401	-66,891	-257,250
Lower Mary Irrigation Distribution	-226,793	54,261	37,544	-8,620	-252,131
Mareeba Irrigation Distribution	479,298	918,997	1,300,099	-284,027	576,372
St George Irrigation Distribution	-176,072	242,666	330,091	-182,437	-271,084
Barker Barambah Water Supply	-271,644	185,633	92,393	0	-364,884
Bowen Broken Water Supply	32,958	268,507	81,679	0	-153,870
Boyne Water Supply	175,097	221,953	145,713	0	98,857
Bundaberg Water Supply	607,188	605,905	492,388	188,055	681,725
Burdekin Water Supply	771,844	773,502	361,063	166,989	526,395
Callide Water Supply	-317,306	401,722	178,201	0	-540,827
Chinchilla Weir Water Supply	53,756	28,697	28,027	0	53,086
Cunnamulla Weir Water Supply	-17,926	11,759	2,238	0	-27,447
Dawson Water Supply	1,122,142	137,143	247,831	203,499	1,436,329
Eton Water Supply	115,570	296,285	223,746	66,891	109,921
Lower Fitzroy Water Supply	-72,064	122,871	38,638	0	-156,297
Lower Mary Water Supply	1,635	49,810	17,789	8,620	-21,766
Macintyre Brook Water Supply	255,911	197,275	205,860	0	264,496
Maranoa Water Supply	-9,648	11,173	1,742	0	-19,079
Mareeba Water Supply	1,260,474	189,112	338,571	284,027	1,693,960
Nogoa Water Supply	1,382,459	427,733	672,017	171,981	1,798,725
Pioneer Water Supply	-327,859	209,256	248,443	0	-288,672
Proserpine Water Supply	54,149	111,390	71,945	0	14,704
St George Water Supply	1,010,523	225,587	405,860	182,437	1,373,232
Three Moon Water Supply	-124,714	314,256	73,890	0	-365,079
Upper Burnett Water Supply	125,265	321,906	208,482	0	11,841
Upper Condamine Water Supply	148,258	259,148	186,274	0	75,384
Total	**4,457,104**	**10,040,307**	**9,760,513**	**-0**	**4,177,309**

2006

	Opening Balance	Cash Spend	Revenue	Revenue Transfer	Closing Balance
Bundaberg Irrigation Distribution	-563,495	1,422,818	1,396,906	-188,055	-777,462
Burdekin Irrigation Distribution	-987,269	1,626,736	1,163,670	-166,989	-1,617,324
Dawson Irrigation Distribution	854,183	579,676	610,037	-203,499	681,044
Emerald Irrigation Distribution	-1,122,750	290,000	448,977	-171,981	-1,135,755
Eton Irrigation Distribution	-257,250	296,000	150,401	-66,891	-469,740
Lower Mary Irrigation Distribution	-252,131	77,000	37,544	-8,620	-300,208
Mareeba Irrigation Distribution	576,372	638,754	1,300,099	-284,027	953,690
St George Irrigation Distribution	-271,084	310,000	330,091	-182,437	-433,430
Barker Barambah Water Supply	-364,884	150,000	92,393	0	-422,492
Bowen Broken Water Supply	-153,870	30,000	81,679	0	-102,190
Boyne Water Supply	98,857	90,000	145,713	0	154,570
Bundaberg Water Supply	681,725	430,000	492,388	188,055	932,168
Burdekin Water Supply	526,395	420,500	361,063	166,989	633,947
Callide Water Supply	-540,827	169,000	178,201	0	-531,626
Chinchilla Weir Water Supply	53,086	0	28,027	0	81,113
Cunnamulla Weir Water Supply	-27,447	20,000	2,238	0	-45,210
Dawson Water Supply	1,436,329	61,000	247,831	203,499	1,826,659
Eton Water Supply	109,921	153,500	223,746	66,891	247,059
Lower Fitzroy Water Supply	-156,297	70,000	38,638	0	-187,658
Lower Mary Water Supply	-21,766	80,000	17,789	8,620	-75,357
Macintyre Brook Water Supply	264,496	112,000	205,860	0	358,356
Maranoa Water Supply	-19,079	25,000	1,742	0	-42,337
Mareeba Water Supply	1,693,960	58,000	338,571	284,027	2,258,557
Nogoa Water Supply	1,798,725	2,137,500	672,017	171,981	505,224
Pioneer Water Supply	-288,672	278,500	248,443	0	-318,730
Proserpine Water Supply	14,704	73,500	71,945	0	13,149
St George Water Supply	1,373,232	279,000	405,860	182,437	1,682,529
Three Moon Water Supply	-365,079	72,000	73,890	0	-363,188
Upper Burnett Water Supply	11,841	115,000	208,482	0	105,323
Upper Condamine Water Supply	75,384	153,000	186,274	0	108,657
Total	**4,177,309**	**10,218,484**	**9,760,513**	**-0**	**3,719,337**

2007

	Opening Balance	Cash Spend	Revenue	Revenue Transfer	Closing Balance
Bundaberg Irrigation Distribution	-777,462	955,978	1,499,114	-201,814	-436,141
Burdekin Irrigation Distribution	-1,617,324	754,904	1,694,000	-243,092	-921,319
Dawson Irrigation Distribution	681,044	0	82,342	-27,468	735,918
Emerald Irrigation Distribution	-1,135,755	48,145	401,852	-153,930	-935,978
Eton Irrigation Distribution	-469,740	17,660	266,256	-118,419	-339,562
Lower Mary Irrigation Distribution	-300,208	27,049	143,378	-32,920	-216,799
Mareeba Irrigation Distribution	953,690	718,138	1,013,151	-221,339	1,027,365
St George Irrigation Distribution	-433,430	54,100	256,570	-141,803	-372,763
Barker Barambah Water Supply	-422,492	68,727	95,978	0	-395,240
Bowen Broken Water Supply	-102,190	82	2,527	0	-99,745
Boyne Water Supply	154,570	2,895	21,445	0	173,120
Bundaberg Water Supply	932,168	89,645	64,298	201,814	1,108,635
Burdekin Water Supply	633,947	156,983	320,423	243,092	1,040,478
Callide Water Supply	-531,626	18,478	133,425	0	-416,679
Chinchilla Weir Water Supply	81,113	0	2,775	0	83,887
Cunnamulla Weir Water Supply	-45,210	686	14,362	0	-31,534
Dawson Water Supply	1,826,659	89,686	52,396	27,468	1,816,837
Eton Water Supply	247,059	230,230	97,063	118,419	232,310
Lower Fitzroy Water Supply	-187,658	218	7,472	0	-180,404
Lower Mary Water Supply	-75,357	25,248	38,743	32,920	-28,943
Macintyre Brook Water Supply	358,356	117,143	133,724	0	374,937
Maranoa Water Supply	-42,337	2,337	9,453	0	-35,222
Mareeba Water Supply	2,258,557	53,505	21,433	221,339	2,447,824
Nogoa Water Supply	505,224	387,097	120,417	153,930	392,474
Pioneer Water Supply	-318,730	54,936	146,525	0	-227,141
Proserpine Water Supply	13,149	24,098	26,517	0	15,569
St George Water Supply	1,682,529	381,391	46,877	141,803	1,489,818
Three Moon Water Supply	-363,188	-1,316	91,392	0	-270,481
Upper Burnett Water Supply	105,323	126,411	231,162	0	210,074
Upper Condamine Water Supply	108,657	272,901	121,806	0	-42,438
Total	**3,719,337**	**4,677,355**	**7,156,876**	**0**	**6,198,858**

2008

	Opening Balance	Cash Spend	Revenue	Revenue Transfer	Closing Balance
Bundaberg Irrigation Distribution	-436,141	632,162	1,282,235	0	213,932
Burdekin Irrigation Distribution	-921,319	578,113	1,402,913	0	-96,519
Dawson Irrigation Distribution	735,918	32,938	54,926	0	757,906
Emerald Irrigation Distribution	-935,978	70,555	252,606	0	-753,927
Eton Irrigation Distribution	-339,562	31,427	163,696	0	-207,293
Lower Mary Irrigation Distribution	-216,799	44,185	79,176	0	-181,808
Mareeba Irrigation Distribution	1,027,365	865,265	799,417	0	961,517
St George Irrigation Distribution	-372,763	21,638	123,232	0	-271,168
Barker Barambah Water Supply	-395,240	79,765	97,829	0	-377,176
Bowen Broken Water Supply	-99,745	509	2,772	0	-97,482
Boyne Water Supply	173,120	309	28,077	0	200,888
Bundaberg Water Supply	1,108,635	164,980	264,322	0	1,207,977
Burdekin Water Supply	1,040,478	226,545	461,065	0	1,274,998
Callide Water Supply	-416,679	28,384	127,017	0	-318,047
Chinchilla Weir Water Supply	83,887	1,271	3,036	0	85,652
Cunnamulla Weir Water Supply	-31,534	0	13,531	0	-18,002
Dawson Water Supply	1,816,837	58,702	72,754	0	1,830,889
Eton Water Supply	232,310	168,038	192,131	0	256,403
Lower Fitzroy Water Supply	-180,404	79	7,692	0	-172,792
Lower Mary Water Supply	-28,943	9,414	92,937	0	54,580
Macintyre Brook Water Supply	374,937	449,027	135,928	0	61,838
Maranoa Water Supply	-35,222	0	9,601	0	-25,621
Mareeba Water Supply	2,447,824	19,487	247,716	0	2,676,052
Nogoa Water Supply	392,474	274,336	249,273	0	367,412
Pioneer Water Supply	-227,141	246,437	156,923	0	-316,654
Proserpine Water Supply	15,569	19,680	29,357	0	25,245
St George Water Supply	1,489,818	167,921	193,012	0	1,514,909
Three Moon Water Supply	-270,481	32,479	88,154	0	-214,806
Upper Burnett Water Supply	210,074	114,553	232,785	0	328,306
Upper Condamine Water Supply	-42,438	252,684	149,244	0	-145,878
Total	**6,198,858**	**4,590,882**	**7,013,356**	**0**	**8,621,332**

2009

	Opening Balance	Cash Spend	Revenue	Revenue Transfer	Closing Balance
Bundaberg Irrigation Distribution	213,932	641,568	1,337,677	0	910,041
Burdekin Irrigation Distribution	-96,519	2,172,584	1,483,296	0	-785,807
Dawson Irrigation Distribution	757,906	87,917	62,683	0	732,672
Emerald Irrigation Distribution	-753,927	104,261	287,659	0	-570,529
Eton Irrigation Distribution	-207,293	228,206	209,533	0	-225,966
Lower Mary Irrigation Distribution	-181,808	83,097	87,756	0	-177,149
Mareeba Irrigation Distribution	961,517	1,029,408	841,611	0	773,721
St George Irrigation Distribution	-271,168	199,242	122,000	0	-348,410
Barker Barambah Water Supply	-377,176	50,114	106,192	0	-321,098
Bowen Broken Water Supply	-97,482	3,854	3,308	0	-98,028
Boyne Water Supply	200,888	8,208	29,153	0	221,833
Bundaberg Water Supply	1,207,977	352,335	294,395	0	1,150,036
Burdekin Water Supply	1,274,998	221,872	483,923	0	1,537,048
Callide Water Supply	-318,047	50,553	123,933	0	-244,667
Chinchilla Weir Water Supply	85,652	21,023	3,679	0	68,309
Cunnamulla Weir Water Supply	-18,002	19,099	13,785	0	-23,317
Dawson Water Supply	1,830,889	61,855	92,847	0	1,861,882
Eton Water Supply	256,403	201,718	185,410	0	240,095
Lower Fitzroy Water Supply	-172,792	1,647	2,338	0	-172,101
Lower Mary Water Supply	54,580	10,489	72,395	0	116,486
Macintyre Brook Water Supply	61,838	415,002	136,182	0	-216,981
Maranoa Water Supply	-25,621	0	9,801	0	-15,820
Mareeba Water Supply	2,676,052	44,400	282,284	0	2,913,936
Nogoa Water Supply	367,412	329,741	299,880	0	337,550
Pioneer Water Supply	-316,654	209,534	189,478	0	-336,710
Proserpine Water Supply	25,245	34,776	28,786	0	19,255
St George Water Supply	1,514,909	113,202	222,009	0	1,623,716
Three Moon Water Supply	-214,806	30,309	89,269	0	-155,845
Upper Burnett Water Supply	328,306	64,340	189,986	0	453,952
Upper Condamine Water Supply	-145,878	67,307	151,124	0	-62,061
Total	**8,621,332**	**6,857,662**	**7,442,373**	**0**	**9,206,042**

2010

	Opening Balance	Cash Spend	Revenue	Revenue Transfer	Closing Balance
Bundaberg Irrigation Distribution	910,041	913,255	1,531,051	0	1,527,837
Burdekin Irrigation Distribution	-785,807	2,056,675	1,707,931	0	-1,134,551
Dawson Irrigation Distribution	732,672	364,446	69,817	0	438,043
Emerald Irrigation Distribution	-570,529	755,806	349,044	0	-977,290
Eton Irrigation Distribution	-225,966	604,419	336,203	0	-494,182
Lower Mary Irrigation Distribution	-177,149	68,173	104,629	0	-140,693
Mareeba Irrigation Distribution	773,721	2,274,654	928,767	0	-572,167
St George Irrigation Distribution	-348,410	273,385	139,482	0	-482,313
Barker Barambah Water Supply	-321,098	77,194	93,489	0	-304,802
Bowen Broken Water Supply	-98,028	2,002	5,094	0	-94,935
Boyne Water Supply	221,833	2,247	31,227	0	250,813
Bundaberg Water Supply	1,150,036	401,305	325,282	0	1,074,013
Burdekin Water Supply	1,537,048	274,477	503,157	0	1,765,728
Callide Water Supply	-244,667	50,519	124,631	0	-170,555
Chinchilla Weir Water Supply	68,309	6,881	3,860	0	65,287
Cunnamulla Weir Water Supply	-23,317	0	12,717	0	-10,600
Dawson Water Supply	1,861,882	61,135	93,795	0	1,894,542
Eton Water Supply	240,095	340,472	96,769	0	-3,607
Lower Fitzroy Water Supply	-172,101	467	9,320	0	-163,247
Lower Mary Water Supply	116,486	35,830	83,594	0	164,249
Macintyre Brook Water Supply	-216,981	554,287	130,933	0	-640,335
Maranoa Water Supply	-15,820	1,177	9,966	0	-7,031
Mareeba Water Supply	2,913,936	18,092	307,614	0	3,203,458
Nogoa Water Supply	337,550	318,199	326,853	0	346,204
Pioneer Water Supply	-336,710	127,265	223,192	0	-240,782
Proserpine Water Supply	19,255	4,484	35,686	0	50,457
St George Water Supply	1,623,716	276,057	209,263	0	1,556,922
Three Moon Water Supply	-155,845	11,484	90,332	0	-76,997
Upper Burnett Water Supply	453,952	221,643	239,510	0	471,819
Upper Condamine Water Supply	-62,061	127,855	93,418	0	-96,498
Total	**9,206,042**	**10,223,881**	**8,216,626**	**0**	**7,198,788**

2011

	Opening Balance	Cash Spend	Revenue	Revenue Transfer	Closing Balance
Bundaberg Irrigation Distribution	1,527,837	1,507,046	1,190,915	189,004	1,400,710
Burdekin Irrigation Distribution	-1,134,551	2,291,750	1,107,882	184,834	-2,133,585
Dawson Irrigation Distribution	438,043	694,257	82,738	-13,099	-186,575
Emerald Irrigation Distribution	-977,290	327,068	259,416	44,180	-1,000,763
Eton Irrigation Distribution	-494,182	492,741	-45,510	349,623	-682,811
Lower Mary Irrigation Distribution	-140,693	88,826	67,139	12,660	-149,720
Mareeba Irrigation Distribution	-572,167	2,519,868	762,474	128,814	-2,200,746
St George Irrigation Distribution	-482,313	1,741,702	139,719	-8,693	-2,092,988
Barker Barambah Water Supply	-304,802	246,494	100,906	0	-450,390
Bowen Broken Water Supply	-94,935	3,748	3,199	0	-95,484
Boyne Water Supply	250,813	7,166	18,332	0	261,979
Bundaberg Water Supply	1,074,013	700,700	478,976	-189,004	663,285
Burdekin Water Supply	1,765,728	111,946	660,917	-184,834	2,129,865
Callide Water Supply	-170,555	55,225	120,615	0	-105,165
Chinchilla Weir Water Supply	65,287	2,703	2,590	0	65,175
Cunnamulla Weir Water Supply	-10,600	3,028	11,456	0	-2,173
Dawson Water Supply	1,894,542	140,529	83,770	13,099	1,850,882
Eton Water Supply	-3,607	255,424	434,376	-349,623	-174,278
Lower Fitzroy Water Supply	-163,247	2,392	7,277	0	-158,362
Lower Mary Water Supply	164,249	11,423	72,113	-12,660	212,279
Macintyre Brook Water Supply	-640,335	324,504	126,258	0	-838,580
Maranoa Water Supply	-7,031	0	10,162	0	3,131
Mareeba Water Supply	3,203,458	90,922	417,239	-128,814	3,400,960
Nogoa Water Supply	346,204	138,950	301,581	-44,180	464,655
Pioneer Water Supply	-240,782	268,139	159,472	0	-349,449
Proserpine Water Supply	50,457	19,226	23,930	0	55,162
St George Water Supply	1,556,922	259,605	191,654	8,693	1,497,663
Three Moon Water Supply	-76,997	2,558	84,513	0	4,958
Upper Burnett Water Supply	471,819	477,149	221,294	0	215,963
Upper Condamine Water Supply	-96,498	295,445	132,961	0	-258,982
Total	**7,198,788**	**13,080,534**	**7,228,363**	**0**	**1,346,617**