In association with

2008 REVIEW OF WATER PRICES - ASSESSMENT OF EXPENDITURE FORECASTS FOR GWMWATER

Final Report

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Essential Services Commissions

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2008 REVIEW OF WATER PRICES - ASSESSMENT OF EXPENDITURE FORECASTS FOR GWMWATER FINAL REPORT

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EXECUTIVE SUMMARY

Grampians Wimmera Mallee Water Corporation (GWM Water) was formed in 2004 by the amalgamation of the former Wimmera Mallee and Grampians Water Authorities. Since 1st July 2007, under the Water Industry (Governance) Act 2006, its compliance and accountability framework are more closely aligned to the requirements of corporation's law.

GWM Water serves a region with a population of about 72,000 and activities covering some 62,000 square kilometres. Urban water supplies deliver to some 31,000 people in 74 towns/localities and wastewater services are provided to 24 towns/localities.

Price Review

Cardno has been engaged by the ESC to undertake an independent review of the expenditure forecasts provided by GWMWater as part of its Water Plan submissions for the five year period commencing 1 July 2008.

The main objectives of this review are to determine whether the operating expenditure (opex) and capital expenditure (capex) forecasts included in GWMWater's Water Plan:

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

This draft report, submitted to the ESC on 18 January 2008, presents the preliminary comments and recommendations based on a detailed assessment of the forecasts, including a series of structured interviews at GWMWater, where the assumptions and bases used to derive the forecast expenditures were discussed in depth.

Operating Expenditure forecast

A summary of GWMWater's historical and forecast operating expenditure, as included in the ESC's information template is shown below.

	FIRST REG PERIOD			SECOND REG PERIOD				
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Operating Expenditure Summary								
Business as Usual	24.85	25.36	26.35	24.20	24.41	24.17	23.98	23.74
Licence fees	0.19	0.24	0.21	0.21	0.21	0.21	0.21	0.21
Environment Levy	1.20	1.24	1.21	1.17	1.14	1.10	1.07	1.04
Total prescribed BAU opex	26.24	26.83	27.77	25.59	25.76	25.48	25.25	24.98
New Obligations				-	0.14	0.21	0.21	0.26
Total Operating Expenditure	***26.24***	***26.83***	***27.77***	***25.59***	***25.90***	***25.68***	***25.46***	***25.25***
Normalised Opex 2006-07 = 1.00	0.98	1.00	1.04	0.95	0.97	0.96	0.95	0.94

Following our review, GWM Water has revised the 2006-07 estimated expenditure with an actual value of $29.31m, which reflects additional drought expenditure in that year. For the expenditure forecasts for the second regulatory period, GWM Water is assuming that there will be no additional drought costs.

Overall, we conclude that the future operating cost estimates as presented, show appropriate adjustments from the existing operational costs to take into account the significant changes that GWM Water will need to make over the Water Plan period as the Wimmera Mallee Pipeline network replaces the channel system. Assumptions underpinning the expenditure forecasts appear realistic.

Efficiency reductions reflect a 1% p.a target and given the major changes to be implemented in operational practice, this will impose a major challenge on the business. In our view the proposed 17% reduction in employee numbers over the period will require very careful management to ensure that the change from a channel to a pipe system is smooth and service integrity and performance and water quality standards are maintained.

At this stage we believe that the estimated future power cost requirements for the WMPP, while based on assumed, preliminary operational requirements, may be an underestimate because GWM Water has yet to establish power supply agreements. Hence, in our view, they are materially uncertain and may require further investigation.

Capital Expenditure Forecasts

A summary of GWMWater's historical and forecast capital expenditure, as included in the ESC's information template is shown below.

	FIRST REG PERIOD			SECOND REG PERIOD					Total
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2008-13
Gross capital expenditure (Template) **($m)**	**15.33**	**127.08**	**310.80**	**210.18**	**87.75**	**11.78**	**15.68**	**18.53**	**343.91**
From Template:									
WMP Project gross capex		**118.16**	**298.33**	**197.09**	**73.43**				**270.52**
WMPP Govt contributions	7.20	120.57	206.00						333.77
WMPP GWMW contributions			82.00	24.00					106.00
WMPP funding to be agreed				173.00	75.00				248.00
Rest of programme			**12.47**	**13.10**	**14.31**	**11.78**	**15.68**	**18.53**	**73.40**

Further to our review, GWM Water has updated this to reconcile with Appendix 8 of the Water Plan, reflecting revised timing of the WMPP and one additional ongoing capex project. Revised figures are given below.

	FIRST REG PERIOD			SECOND REG PERIOD					Total
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2008-13
Gross capital expenditure ($m)		**147.64**	**297.61**	**251.03**	**45.04**	**11.78**	**15.69**	**17.83**	**341.35**
WMP Project gross capex		**140.00**	**282.00**	**236.00**	**30.00**				**266.00**
WMPP Govt contributions		137.00	197.00						334.00
WMPP GWMW contributions		3.00	85.00	18.00					103.00
WMPP funding to be agreed				218.00	30.00				248.00
Rest of programme			**15.61**	**15.03**	**15.04**	**11.78**	**15.69**	**17.83**	**75.35**

Wimmerra Mallee Pipeline Project (WMPP)

Forecast expenditure is dominated by the Wimmerra Mallee Pipeline Project (WMPP), which replaces the existing channel system with a 8670km pipe network at an estimated cost of $688m. To date GWM Water has committed funded expenditure of $350m and with additional funding now becoming available, plans to spend a further $338m by 2009/10 to complete the project.

In April 2007, GWM Water identified that project costs were likely to exceed the available funds and had consultants prepare a revised forecast cost model including a risk assessment. This model was also subjected to independent review. Following this, GWM Water prepared a Program Review Report in August 2007 restating the importance of the project to the region, a revised cost estimate of $688m and a proposed acceleration of the programme from five years to three. This has been used in support of a request for additional funding from government.

We have reviewed the project and conclude that:

- The project estimate is realistic and takes into account both inherent and unplanned risks. At present, $25m of the cost estimate is available to cover unplanned risks;
- The estimate of future costs makes no allowance for inflation and is therefore dependent on the three remaining supply areas being put out to tender by July 2008 to minimise any impact of labour, fuel and PVC pipe price increases after March 2007;
- Should future contract costs exceed the estimates significantly, GWM Water has the option to defer some $12m of work on channel decommissioning, included in the estimates, to a later date;
- Good progress has been achieved since the project started in May 2006, however, some 6500km of pipe has yet to be laid, which will require a significant ramping up of contractor resources, which may exceed the capacity locally and could result in a premium being added in tender prices for additional contractor mobilisation;
- Large diameter pipes have long supply lead times and GWM Water is planning to let a separate supply only contract for these, as soon as possible, to meet the planned three year programme; and
- For each month that the award of the remaining tenders may be delayed beyond early April 2008, some $28m would be deferred from 2007/08 to 2008/09.

In our view, subject to additional funding being available early in 2008 and tender prices being locked in by mid 2008, GWM Water should be able to manage the project through to completion within the project estimate at close to its projected time frame of three years. We recommend that GWM Water regularly reassesses the risks and implements active management and control of any future disbursement of the $25m unplanned risk element of the estimate.

Rest of the Capital Programme

The rest of the capital programme totals $75.35m over the five year period, with annual expenditure slightly higher than that in the first period. Compliance expenditure accounts for 51% of this, with Renewals expenditure at 18% and Corporate expenditure accounting for some 24%.

GWM Water has established project identification and approval processes. In developing the Capital Program for the Water Plan, GWMW has used these and carried out a reasonably detailed and iterative review of projects required over the next ten years, reflecting a planning horizon beyond the second regulatory period.

In our view, the programme of capital projects included in the Water Plan for 2008-13, has resulted from a robust project identification and prioritisation process, which we consider has been rigorous and effective in defining project needs for the period.

Large projects

The top eleven capital schemes account for 44% of the capital programme in the period, excluding the WMPP. We have reviewed these and concluded that for each the need is clearly justified, being required either under the Statement of Obligations, Directions from DHS or DSE, through customer request and in one case, operational efficiency improvements. Cost estimates for five of the projects are developed at a reasonable level of detail, with option evaluation completed and the scope of works identified. Cost estimates for the other projects are very preliminary, either based on escalated prices from previous studies or based on estimates from similar type works recently completed but without any clear definition of scope at the site itself. Of necessity some cost estimates will

be preliminary at this stage and will only be developed as the designs are progressed. We are of the opinion though, that GWM Water has capital management processes in place that should allow delivery of individual projects at efficient cost while controlling the overall programme expenditure.

Corporate expenditure on SCADA, IT improvements and vehicle and plant replacement are supported by appropriate strategies and cost estimates are realistic.

We have identified very little scope for deferral of projects. The Nhill treated water supply is required by the DSE within the Water Plan period, as are other projects within the Country Towns Program. The SCADA project extends an existing project to deliver on operational efficiencies and ensure operational control for the WMPP. Dam safety projects are only addressing high priority works within the period. Deferral of customer requests for projects to address untreated supplies would mean continuing risks to health.

Asset renewal

Asset management is a key area of the business where GWM Water has recognised that there were shortcomings in its approach and has taken steps over the last three years to address the issues. Much work is still to be done, particularly with regard to collection of reliable condition and performance data for its assets to make long term forecast of its asset renewal expenditure needs.

For this Water Plan GWM Water has made a short term prediction of need based on historical expenditure levels and available condition data and staff knowledge. In our view the approach adopted is adequate and we consider that the resulting asset renewal expenditure profile is reasonable. Again capital management processes are in place to ensure that expenditure is targeted effectively.

Programme deliverability

Having noted the improvements that GWM Water has made and continues to make in its capital management processes, it is reasonable to assume that, given continuing and adequate internal resources, GWM Water has the ability to deliver its planned capital programme for 2008 -13, which averages expenditure of $15m p.a. This compares with an average of $13m p.a. over the first regulatory period.

1. INTRODUCTION AND BACKGROUND

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

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

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

Cardno has been engaged by the ESC to undertake an independent review of the expenditure forecasts provided by GWMWater as part of their Water Plan submissions for the five year period commencing 1 July 2008.

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

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

In undertaking the review, Cardno is required to provide advice to the ESC on whether:

- The capital expenditure forecasts are consistent with existing obligations and service standards are reasonable - having regard to trends in historical expenditure, the reasons underpinning any difference in the expected level from those trends and any other relevant factors;
- There is sufficient evidence of, and consistency with, well developed asset management planning and processes that demonstrate that the forecasts for the next regulatory period have been determined in the context of a planning horizon that extends beyond the term of the Water Plan;
- The proposed program of capital expenditure is deliverable over the five year regulatory period – having regard to the required lead time, approvals processes, any resource constraints and the businesses' abilities to deliver previous capital expenditure programs;
- The proposed trend in operating expenditure over the regulatory period consistent with existing obligations and service standards is reasonable – having regard to expected productivity improvements, trends in input prices and the impact of growth on operating expenditure needs and any other relevant factors; and
- The operating and capital expenditure forecasts associated with meeting new obligations and/or meeting higher service levels reflect their likely expenditure

requirements – having regard to any benchmarking or other quantitative techniques considered appropriate.

An Issues Report and presentation, which identified the preliminary views on GWMWater's proposed expenditure forecasts and the nature of further work and investigation to be undertaken, was presented to the ESC on 26 November 2007.

A draft report was submitted to the ESC on 18 January 2008, presenting the preliminary comments and recommendations based on a detailed assessment of the forecasts, including a series of structured interviews at GWMWater, where the assumptions and bases used to derive the forecast expenditures were discussed in depth.

GWMWater has provided a written response to this draft report to comment on the findings and recommendations that have been made, clarify any outstanding issues, and correct factual errors and any misinterpretations. This has been used to prepare this Final Report.

2. EXPENDITURE REVIEW METHODOLOGY

Our approach to reviewing GWMWater's expenditure forecasts involved an initial desktop study where the Final Water Plan and expenditure forecasts that had been submitted to the ESC, along with other information that was readily available, were reviewed. This preliminary review and assessment was then followed by a more detailed analysis of the expenditure forecasts, involving a series of structure interviews with GWMWater to discuss how the forecasts had been derived and the assumptions that had been made.

2.1 Initial Review Stage

The initial review and assessment involved:

- A desktop assessment of GWMWater's Water Plan for 2008-13 and the expenditure forecast templates that had been submitted to the ESC;
- An initial review of any other information that was readily available, i.e., recent Annual Reports that were able to be downloaded from the business's website;
- Identifying the key issues in the submission that would need to be reviewed in more detail; and
- Identifying any additional information requirements to assist in the more detailed review.

The outcomes of the initial review phase were used to prepare an Issues Report and presentation, submitted to the ESC on 26 November 2007, which identified the key issues associated with the business's proposed expenditure forecasts. These key issues were discussed in detail with the ESC and used to form the review plan The Issues Report also formed the main focus of the more detailed review stage.

2.2 Detailed Review Stage

The detailed review stage involved more in depth analysis of the expenditure forecasts and included a series of structure meetings with key GWMWater staff. In particular the detailed review stage involved:

- A more in depth review of the key aspects of GWMWater's expenditure forecasts for 2008-13;
- Specific focus on the key issues that had been identified through the Issues Report and discussions with the ESC;
- An assessment of GWMWater's supporting systems and processes, including those used for asset management, capital planning, project management and budgeting;
- A more detailed review of the main and highest costing capital projects proposed during the 2008-13 timeframe; and
- A more detailed assessment of the impacts on operating expenditure of these capital projects.

The outcomes from this detailed review stage were outlined in a Draft Report, dated 18 January 2008. This Final Report has been prepared following written comments received from GWM Water.

3. DETAILED ANALYSIS OF GWMWATER'S PROPOSED OPERATING EXPENDITURE

3.1 Operating expenditure summary

A summary of GWMWater's historical and forecast operating expenditure, as included in the ESC's information template is shown in Table 1.

Table 1 GWMWater Historical and Forecast Operating Expenditure

	FIRST REG PERIOD			SECOND REG PERIOD				
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Operating Expenditure Summary								
Business as Usual	24.85	25.36	26.35	24.20	24.41	24.17	23.98	23.74
Licence fees	0.19	0.24	0.21	0.21	0.21	0.21	0.21	0.21
Environment Levy	1.20	1.24	1.21	1.17	1.14	1.10	1.07	1.04
Total prescribed BAU opex	26.24	26.83	27.77	25.59	25.76	25.48	25.25	24.98
New Obligations				-	0.14	0.21	0.21	0.26
Total Operating Expenditure	***26.24***	***26.83***	***27.77***	***25.59***	***25.90***	***25.68***	***25.46***	***25.25***
Normalised Opex 2006-07 = 1.00	0.98	1.00	1.04	0.95	0.97	0.96	0.95	0.94

Following our review, GWM Water has updated the figures to reflect actual expenditure in 2006-07. This is given in Table 2 below. Increased costs are drought related due to water carting, emergency bores and ground water licensing.

Table 2 GWMWater Historical and Forecast Operating Expenditure updated Dec 2007

	FIRST REG PERIOD			SECOND REG PERIOD				
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Operating Expenditure Summary								
Business as Usual	24.85	27.84	26.35	24.20	24.41	24.17	23.98	23.74
Licence fees	0.19	0.24	0.21	0.21	0.21	0.21	0.21	0.21
Environment Levy	1.20	1.24	1.21	1.17	1.14	1.10	1.07	1.04
Total prescribed BAU opex	26.24	29.31	27.77	25.59	25.76	25.48	25.25	24.98
New Obligations				-	0.14	0.21	0.21	0.26
Total Operating Expenditure	***26.24***	***29.31***	***27.77***	***25.59***	***25.90***	***25.68***	***25.46***	***25.25***
Normalised Opex 2006-07 = 1.00	0.90	1.00	0.95	0.87	0.88	0.88	0.87	0.86

3.2 General and Key Issues

3.2.1 Breakdown of expenditure

As part of this review, GWM Water has provided a breakdown of its historical and forecast Business as Usual operating expenditure. This is set out in Table 3 in real terms. The totals differ from Table 2 for 2005-06 of the first regulatory period. Hence some further reconciliation may still be required.

Table 3 Breakdown of Historical and Forecast Operating Expenditure

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	Average % p.a.change from 2006/07	% of total in 2005/06	% of total in 2012/13
Business as Usual Breakdown:											
Employee costs	12.13	11.65	11.36	10.55	10.20	9.99	9.78	9.59	-3.1%	46.0%	40.4%
Materials/Chemicals	1.80	2.65	1.25	1.25	1.25	1.22	1.21	1.21	-0.6%	6.8%	5.1%
Plant/Vehicle costs	1.24	1.10	0.80	0.76	0.70	0.63	0.62	0.61	-4.8%	4.7%	2.6%
Utilities	1.58	1.43	1.33	2.07	3.07	3.24	3.34	3.39	31.1%	6.0%	14.3%
Contractors/Consultants	3.51	5.43	4.63	3.74	3.62	3.54	3.47	3.40	-5.3%	13.3%	14.3%
Analysis/Sampling	0.44	0.36	0.30	0.30	0.31	0.30	0.30	0.30	0.0%	1.7%	1.3%
Other	2.57	2.08	2.21	2.23	2.22	2.22	2.21	2.20	-0.1%	9.8%	9.3%
Insurance	0.73	0.60	0.61	0.62	0.63	0.64	0.65	0.66	1.9%	2.8%	2.8%
Boot Toll	2.16	1.73	1.85	2.16	2.16	2.16	2.16	2.16	3.4%	8.2%	9.1%
Plant Hire External	0.04	0.01	1.81	0.29	0.02	0.02	0.02	0.02	-19.8%	0.2%	0.1%
Bulk Water	0.15	0.86	0.21	0.21	0.21	0.21	0.21	0.22	0.8%	0.6%	0.9%
Total	**26.35**	**27.90**	**26.36**	**24.18**	**24.39**	**24.17**	**23.97**	**23.76**		100.0%	100.0%

This information indicates that:

- Business as Usual operating expenditure is forecast to reduce to 86% of the 2006-07 actual value in Table 2. Excluding exceptional drought cost in 2006-07, this represents an overall reduction of about 1% per annum but there are significant changes in individual components of the costs;

- Employee costs reduce over the period by 3.1% per annum. This is derived from an analysis and forecast of Full Time Equivalent (FTE) staff number requirements and reflects a reduction of about 35 FTE, some 17% of the current numbers, excluding the WMPP project team. This breakdown of the manpower requirements shows ongoing staff reductions in operations, due to the implementation of SCADA, reductions in the Corporate and Customer service and billing functions and a particular, significant reduction in Distribution as the Wimmera Mallee Pipeline Project (WMPP) is implemented and the existing channel system is decommissioned. No allowance is made for wage cost increases greater than CPI;

- Material and chemical cost forecasts allow for a reduction from 2009-10 as the channel system is no longer required to be maintained;

- Plant and vehicle costs assume an increase in real costs of 0.9% p.a. to reflect increases in fuel prices and other costs but show an overall reduction in line with the reducing fleet size as employee numbers reduce and efficiencies from SCADA are realised;

- Utility costs, which are primarily for electricity, show a major increase over the period as the WMPP is commissioned. An increase in real prices of 0.9% p.a is assumed. The WMPP is forecast to add some $2m p.a to power costs over the period. These cost increases are based on a preliminary assessment of the bulk power that will be required by all the pumping stations for each of the six supply systems. Estimates have been made of daily, monthly and annual usage and assumptions made about operating hours at high and low tariffs to derive potential future costs. These are preliminary estimates only and hence uncertain at this stage. Optimal operating regimes can only be established once the stations are in operation and demand take up becomes clear. GWM Water has yet to establish power supply agreements to cover the forecast increase in demand and in our view the assumed increase of 0.9% p.a. could be an underestimate, given the current energy market conditions. This could have a material impact on future costs and requires further investigation;

- Contractor/Consultant costs show a reduction over the period, reflecting both a reduction in requirement as the WMPP replaces the channel system and an efficiency target of 1-2%;

- Boot tolls for the four water treatment plants are forecast to increase by $0.4m from 2008-09 as the volume taken increases;

- External plant hire cost is forecast to return to low levels after the current water carting requirements cease; and

- Insurance costs are assumed to inflate at 1.9% p.a above CPI.

3.2.2 Operating efficiencies

In the forecasts, GWM Water is committing to an overall 1% p.a reduction in operating expenditure and sets out the general areas in which these are expected to occur. Forecasting cost savings in relation to each initiative has relied on many assumptions. In addition, the overall reduction in costs masks the significant changes that will arise from the implementation of the WMPP, where GWM Water plans to reduce staff numbers to offset increased energy expenditure.

Some efficiency savings from the original merger of the two businesses, have been identified as yet to be fully realised in the Customer Services area and plans are in place for rationalisation.

The implementation of the SCADA network is well advanced and is seen as strategically important in improving the operational efficiency of the business. While general benefits can be outlined, the SCADA strategy is clear that:

> *"the determination of the benefits from the system was more difficult that originally planned due not only to the inability to capture actual cost savings, but more importantly, identifying the requirements to make operational changes for realising operational benefits. The SCADA investment is one, which provided the rollout enables Operations to change operating techniques to improve efficiencies, will clearly provide the Authority with enormous benefit."*

In the Water Plan, benefits are assumed to be a reduction in the requirement for staff and travel costs, but specific details have yet to be established.

Some new initiatives are not necessarily defined in detail or have developed business strategies. In particular, the operational requirements for the WMPP have yet to be defined in detail, although GWM Water has started training and recruiting staff for its operation, drawing on its operational experience from the North Mallee pipeline system. The first supply systems of the WMPP will be handed over to the business in early 2008. Operating cost assumptions are that staff numbers in Distribution will reduce from 32 to 18 by 2009-10. We have not seen any specific detail to support this assumption. Future power requirements are estimated using preliminary information and remain materially uncertain, both in the actual power requirement and the unit prices that GWM Water will need to pay in the future.

Other assumptions within the Water Plan are that:

- Staff reductions can be achieved without compromising service standards;
- GWM Water will absorb any salary increases greater than CPI, including the need for employing staff with different skill sets; and
- Power costs will rise at only 0.9%p.a above inflation. This may be an underestimate.

3.2.3 New Obligations

Additional operating costs from new works obligations are about 1% p.a by the end of the period. These costs are based on operating expenditure for similar type works and are considered reasonable.

3.3 Recommendations

Overall, we conclude that the operating cost estimates as seen, show reasonable adjustments from the existing operational costs to take into account the significant changes that GWM Water will need to make over the Water Plan period.

Assumptions underpinning the forecasts appear generally realistic. Efficiency reductions reflect a 1% p.a target, but given the major changes to be implemented in operational practice, this will impose a major challenge on the business. In our view the proposed 17% reduction in employee numbers over the period will require very careful management to ensure that the change from a channel to a pipe system is smooth and service integrity and performance and water quality standards are maintained. Also, at this stage we believe that the estimated future power cost requirements are materially uncertain and may be an underestimate.

4. DETAILED ANALYSIS OF GWMWATER'S PROPOSED CAPITAL EXPENDITURE

4.1 Capital Expenditure summary

A summary of GWMWater's historical and forecast capital expenditure, as included in the ESC's information template is shown in Table 4 together with further cost breakdowns drawn from the Water Plan submission in Oct 2007.

Table 4 GWMWater Historical and Forecast Capital Expenditure

	FIRST REG PERIOD			SECOND REG PERIOD					Total
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2008-13
Gross capital expenditure (Template) **($m)**	**15.33**	**127.08**	**310.80**	**210.18**	**87.75**	**11.78**	**15.68**	**18.53**	**343.91**
From Template:									
WMP Project gross capex		**118.16**	**298.33**	**197.09**	**73.43**				**270.52**
WMPP Govt contributions	7.20	120.57	206.00						333.77
WMPP GWMW contributions			82.00	24.00					106.00
WMPP funding to be agreed				173.00	75.00				248.00
Rest of programme			**12.47**	**13.10**	**14.31**	**11.78**	**15.68**	**18.53**	**73.40**
From Table 7.1.3 in Water Plan:									
Infrastructure - Renewals				2.17	2.97	3.16	2.83	2.70	13.82
Infrastructure - Improvement				1.10	1.10	-	0.25	-	2.45
Infrastructure - Compliance				4.53	7.11	7.16	9.27	10.38	38.45
Infrastructure - Growth				0.26	0.21	1.47	0.16	0.16	2.26
Corporate				6.26	3.66	3.24	2.83	2.51	18.49
Rest of Programme (exc WMPP)			-	**14.32**	**15.05**	**15.03**	**15.33**	**15.75**	**75.47**
From Appendix 8 of Water Plan:									
WMPProject			**282.00**	**236.00**	**30.00**				**266.00**
Infrastructure			10.16	10.26	12.44	8.64	12.90	15.36	59.60
Corporate			4.85	4.06	2.60	3.14	2.78	2.46	15.04
Sub total - Rest of programme			**15.01**	**14.32**	**15.04**	**11.78**	**15.68**	**17.82**	**74.64**
Total programme			**297.01**	**250.32**	**45.04**	**11.78**	**15.68**	**17.82**	**340.64**

Following our review, which identified a number of inconsistencies, GWM Water has advised that the figures in the Appendix 8 are correct except for the omission of one project for WMPP fire plugs totalling $1.3m over 2007-8 and 2008-9. The business has provided an updated template to reflect the revised figures. These are given in Table 5 below.

Table 5 GWMWater Historical and Forecast Capital Expenditure updated Dec 2007

	FIRST REG PERIOD			SECOND REG PERIOD					Total
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2008-13
Gross capital expenditure ($m)		**147.64**	**297.61**	**251.03**	**45.04**	**11.78**	**15.69**	**17.83**	**341.35**
WMP Project gross capex		**140.00**	**282.00**	**236.00**	**30.00**				**266.00**
WMPP Govt contributions		137.00	197.00						334.00
WMPP GWMW contributions		3.00	85.00	18.00					103.00
WMPP funding to be agreed				218.00	30.00				248.00
Rest of programme			**15.61**	**15.03**	**15.04**	**11.78**	**15.69**	**17.83**	**75.35**

GWM Water has deleted the Murrayville water upgrade project totalling $0.25m and figures are consistent with the updated Water Plan.

4.2 General and Key Issues

- Forecast expenditure is dominated by the Wimmerra Mallee Pipeline Project (WMPP). To date GWM Water has committed funded expenditure of $350m and subject to additional funding becoming available, plans to spend a further $338m by 2009/10 to complete the project;
- The rest of the capital programme totals $75.35m over the five year period, with annual expenditure slightly higher than that in the first period;
- Major infrastructure expenditure relates to Renewals at 18% and Compliance at 51% of the programme total; and
- Corporate expenditure, including system upgrades, accounts for some 24% of the programme.

4.3 Capital Planning Processes and Program Development

GWM Water has established appropriate project identification and approval processes.

In developing the Capital Program for the Water Plan, GWMW has used these and carried out an extensive review of projects, identifying need, scope and prioritisation of projects. Key strategies supporting the Plan relate to:

- The Water Infrastructure and Services Plan (WISP). This reviews each town and considers needs relating to service level improvement, Directions from DHS and DSE, customer consultation, operational experience and future development;
- The Wastewater Infrastructure and Services Plan (WWISP). This reviews each town and considers needs relating to service levels, Directions from DSE on the Country Towns Program, sewer infill and operational experience;
- Dam Safety. Projects have been prioritised based on Risk Assessments in accordance with ANCOLD requirements. This is an ongoing programme of work;
- Asset Lifecycle Plans (ALCP) for asset renewals; and
- Other key expenditure drivers, such as Health and Safety, Plant and motor vehicles and other corporate requirements, e.g. IT.

Under each category, projects have been identified and an initial risk assessment made. Projects were prioritised and overall programme deliverability assessed. The initial programme developed was not considered to be affordable by the Board and a further prioritisation was carried out to derive the final programme in the Water Plan. We have seen clear evidence of this process and consider that the approach has been rigorous and effective in defining the projects and expenditure included in the Water Plan.

Project Approval processes as projects are developed are also clearly defined, requiring management sign off at the following milestones:

- Business Case. This comprises option evaluation, risk review and affordability;
- Procurement Strategy. This develops a Project Plan and updates the business case;
- Tender decision. This stage is used to evaluate tenders, update the business case and award contracts;
- Readiness for service, acceptance testing and handover; and
- Benefits evaluation. This reviews the original business case and actual delivery of benefits.

The key programme control document is the Capital Works Expenditure Plan, which is updated regularly. Management control is through the Environment and Works Committee, which meets quarterly, through capital expenditure progress reports included in the Business Performance Report and through the project approval processes.

This approval process has been implemented recently, drawing together previous processes and recent experience to improve deliverability of the programme. This is discussed in more detail in section 4.8.

4.4 Asset Management Systems and Processes

4.4.1 Progress on system development since 2005

GWM Water's major asset groups are:

- North Mallee pipe system, some 3500km of mains, less than 15 years old;
- Wimmera Mallee Pipeline system, some 8670km of mains, currently under construction;
- Reservoirs, which are already subject to stringent risk management requirements; and
- Ageing urban assets, which have been the key focus for asset management planning for the Water Plan period.

Following an Asset Management Review in 2005, GWM Water developed its 'Asset Management Plan 2005-10', which proposed a number of actions. In the last two years, GWM Water has made significant progress in implementing this Plan and developing its asset management systems and process. In particular it has:

- Merged its two asset data systems;
- Developed its SCADA strategy and successfully implemented the first phase;
- Upgraded its GIS system to allow intranet based access across the business;
- Commenced developing GIS linked hydraulic models for network planning;
- Initiated development of asset lifecycle plans (ALCPs) for its assets; and
- Created ALCPs for renewal of its major asset categories.

ALCPs were prepared by consultants for sewer reticulation, water network, water treatment and wastewater treatment assets using a risk based approach. Lifecycles were projected over a 100 year period using an asset management software package, with asset condition and criticality being derived from GWM Water data sources. Further ALCPs were developed in-house for water and sewerage pump stations and irrigation networks. For these, replacement profiles were based on available condition assessment data.

A mid term review of the Asset Management Plan, carried out in 2007 together with results from these ALCPs identified:

- Shortfalls in data availability and integrity, which are described further below;
- A need for data capture on completion of projects;
- A need for an improved works management system;
- A need for upgrade of the asset management system software; and
- Incorporation of the WMPP data into the asset system.

The asset system and the GIS provide a reasonable asset register for the business, but GWM Water acknowledges that condition and performance data is very limited at present and is working to address this and other identified shortcomings.

For the ALCPs, condition data is important to assess the remaining life of existing assets. At present GWM Water's asset database provides limited information on condition data for individual assets. In general, good data is available for asset age and type, so for the models, condition has been mostly estimated using this data.

Performance data is very limited and does not provide sufficient details on the cause of failure. It is not possible to determine exact failure rates and it is therefore essential that GWMWater continues to carry out physical condition assessments to be able to target expenditure effectively.

4.4.2 Basis of cost estimates in the Water Plan

The actual approach adopted for forecasting expenditure for each major asset category in the Water Plan is set out below.

Linear Assets (Water Mains)

Capital expenditure over the Water Plan period for water mains as produced in the ALCP, was significantly greater than the historical spend on these assets.

It is part of the ongoing strategy that the specific replacement programme each year becomes based on updated information about asset performance/condition. GWMWater has implemented this process in recent years, to enable investment to be more effectively targeted rather than relying on a replacement programme based on age of asset alone, but it has yet to be fully realised. Data on mains breaks is being recorded but not reliably at present and cost data that would allow economic evaluation is not collected at this level of detail. GWM Water understands the shortcomings and is working to improve its data availability and reliability. In the long term, 50 to 60 years, with the NMP and WMPP implemented, water main asset renewal will become a major part of the business expenditure.

For this Water Plan therefore, given the shortcomings in the ALCP, expenditure for the existing ageing network has been based on historical expenditure levels, which are significantly below those which have been projected in the ALCP.

Linear assets (sewers)

Capital expenditure over the Water Plan period for sewers, as produced in the ALCP, was significantly greater than the historical spend on these assets.

To verify this, an extensive CCTV program began in 2006/7 and increasingly condition assessment data (CCTV) in addition to performance data is being used to undertake a risk management approach to sewer rehabilitation and renewal into the future. Allowance is made in the annual recurrent budget to continue these surveys into the future.

For this Water Plan, expenditure has been based on historical expenditure levels, which are significantly below those which have been projected in the ALCP.

Linear assets (Domestic and Stock channels)

These are being replaced by the WMPP. An allowance for decommissioning these assets is included in that project budget, so no allowance is made here for asset replacement.

Waste Water Treatment Plants

In the absence of failure data, the creation of the ALCP for the wastewater treatments plants relied heavily on the knowledge of local operations staff, construction/ replacement/rehabilitation data from recent projects, and as-constructed drawings, in addition to a small number of pre-existing condition assessment reports. Expenditure forecasts have been derived from this information.

Expenditure for works identified under the WWISP has been separated from the ACLP and separate line items included in the Water Plan for each project, but each will be undertaken as a single contract on site to improve project management efficiency.

Water Treatment Plants

As for WWTP's the creation of the ALCP for the water treatment plants relied heavily on the knowledge of local operations staff, construction/replacement/rehabilitation data from recent projects, as-constructed drawings, and a limited number of condition assessment reports. Expenditure forecasts have been derived from this information.

Capital replacement or rehabilitation will be required for Pumps, Compressors, Process Tanks and Chemical Dosing Equipment, which generally have a high degree of redundancy with standby equipment to limit the effect of breakdowns. Determination of the actual time for replacement or rehabilitation will be subject to reliability and overall condition for individual plant items.

Pump Stations (Water and Sewage)

Forecast expenditure for Sewage pump station (SPS) and water pump station (WPS) assets was derived for major components, pumps, electrical controls, pipework and valves, buildings etc, and replacement profiles created using remaining useful life and asset replacement costs. Remaining useful lives were derived from asset condition assessments for the sewerage pumping station and asset age data for the water pumping stations.

Water Storage Tanks

In 2004, consultants undertook an audit of the condition of the GWMWater's water storages. This audit recommended works to be undertaken at the storages. Works prioritised "high" or where the condition is stated as "poor" have been planned to be undertaken during the Water Plan period.

Bulk Meters

Limited information is available regarding condition of meters and the current replacement rate is being maintained to ensure accuracy of flow measurement, in accordance with statutory requirements.

Irrigation Network

The irrigation network consists of 1340 assets, including regulators, syphons, culverts, and bridges. A replacement profile was created using asset age and replacement costs from the Asset Life database.

Irrigation water has not been supplied for the last 5 years because of the drought. Use of the irrigation network over the Water Plan period will depend on replenishment of the storages, at this time it is not expected that the irrigation system will be extensively used during this period, so the budget in the Water Plan is limited.

Customer Water Meters (Urban and Rural)

Replacement of customer water meters is a regulatory requirement under the SoO for GWMWater to maintain accurate levels of flow measurement. The replacement profile has been based on the age of meters.

Headworks Asset Replacements

Although much of the channel system will be replaced by the WMPP, several major water transfer channels remain (i.e. Toolondo and Rocklands Channels). Headwork channels and structures renewal projections are based on a risk management system where condition and criticality are regularly check by operations staff.

Reservoirs renewals are guided by ANCOLD requirements and condition assessments regularly undertaken by consultants. The subsequent recommendations of the consultant's reports have been used for Water Plan projections

4.4.3 Summary

In summary, while significant progress has been made on the asset management systems, insufficient reliable data exists at present to develop ALCPs fully for the major assets. GWM Water clearly recognises these limitations and plans are in place to improve data collection and reliability through use of SCADA and improvements to the works management system. In the interim for this Water Plan, forecasts draw on age and condition data where available and historical spend. Forecast expenditure is set out in Section 4.7.

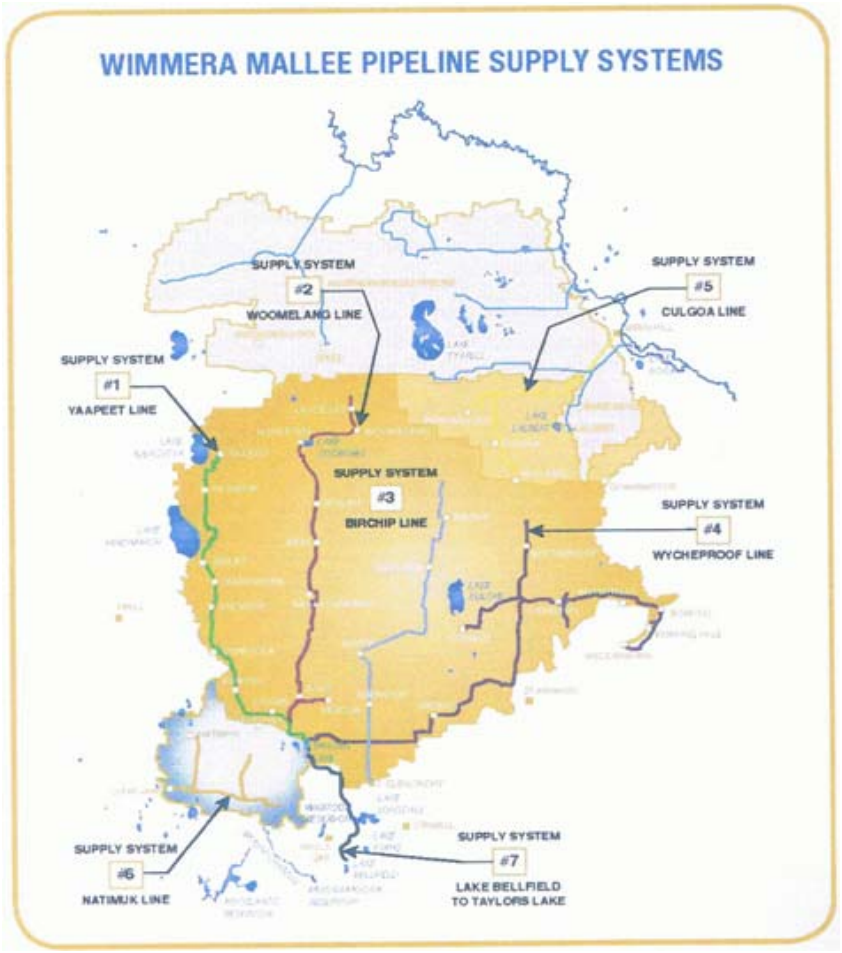
4.5 Wimmera Mallee Pipeline Project (WMPP)

4.5.1 Project Description

The Wimmera Mallee Pipeline Project (WMPP) dominates the capital programme during 2007/08 and for the first two years of the Water Plan period. The project is to replace the existing channel supply system with a network of some 8670km of water mains and associated pumping stations and storages. The project agreement was signed in May 2006 and the first pipes were laid in November 2006.

The figure below shows the WMPP layout for the seven planned supply systems.

Figure 1 WMPP Supply Systems



In April 2007, GWM Water identified that project costs were likely to exceed the available funds and had consultants prepare a revised forecast cost model including a risk assessment. This model was also subjected to independent review. Following this, GWM Water prepared a Program Review Report in August 2007 restating the importance of the project to the region, a revised cost estimate of $688m and a proposed acceleration of the programme from five years to three. This has been used in support of a request for additional funding from government.

The most recent cost estimate and progress to date for each supply system are given in Table 6.

Table 6 WMPP Progress and cost estimate

Supply System	Cost Estimate $m	Status at November 2007
SS 1 & 7	182	Completion of pipes and pump stations expected Dec 2007 and storages Feb 2008.
SS 5	58	Completion of pipes expected Dec 2007, pump stations Jan 2008 and storages Feb 2008
SS 2 Trunk	50	Awarded as variation to SS 1 & 7. Completion of pipes expected Dec 2007 and pump stations and storages May 2008
SS 2 Distribution	60	Contract awarded Nov 2007. Planned completion June 2008.
SS 3	161	Design in progress. Pipe supply contract award planned for Feb 2008 and construction contract award planned for April 2008, all pending availability of funds. Planned completion March 2009.
SS 4	117	Design in progress. Construction contract award planned for April 2008 pending availability of funds. Planned completion March 2009.

Supply System	Cost Estimate $m	Status at November 2007
SS 6	60	Design programmed for early 2008. Construction contract award planned for July 2008 pending availability of funds. Planned completion September 2009.
Total	**688**	

Hence, with the recent letting of the Distribution system contract for SS2, the cost of the works let by the end of 2007 is about $350m. The cost to complete the remaining works is estimated to be $338m. There is $91m remaining from the original tripartite contributions, totalling $440m, and GWM Water has made submissions for additional funding by the State and Commonwealth governments to assist in meeting the $248m funding gap and now has been supported with additional funds of $223m. This includes for an acceleration of the programme to complete the project in three years rather than the five years in the original project agreement.

4.5.2 Basis of Cost Estimate

The tables below set out the components of the base cost estimate and output from the risk analysis which has been built up by Evans and Peck and which has been reviewed subsequently by Flagstaff Consulting Group Ltd.

Table 7 WMPP Base Cost Estimate

Component	Base Cost Estimate $m
Contractor costs	570.3
Additional costs	28.4
Owner costs	54.9
Total project	**653.6**

The estimates for the contract costs have been built up from tendered costs for Systems 1, 2 trunk, 5 & 7 together with estimated quantities from detailed design. For Systems 2 distribution, 3, 4 and 6, rates from the SS5 contract have been used with estimated quantities derived by using distribution main densities from the designed systems. Costs include for pipes, valves and fittings, pump stations and storages. Possible variances around the estimate have been modelled assuming minimum, most likely and maximum values for quantities and rates. The base date for the cost estimates is March 2007.

Additional costs to GWM Water, together with a risk assessment, are included for:

- Tapping and metering;
- Monitoring and control systems (SCADA);
- Chlorine dosing;
- Power supply installation; and
- Decommissioning of parts of the channel system.

Owner costs, together with a risk assessment, are included for:

- Planning, surveys and site investigations;
- Design and documentation;
- Contract procurement;
- Construction management;
- De-commissioning; and

- Administration.

Risks to the project costs have been assessed using commercially available @Risk software.

In addition to the inherent risks noted above, unplanned risks have also been assessed on a value and likelihood basis. A comprehensive list has been identified including:

- Community and landowner management and compensation cost;
- Increased planning and environmental requirements;
- Changes in legislation;
- Geotechnical issues e.g rock quantities;
- Design changes;
- Project delivery risks e.g Forex risk, additional bedding sand, construction delays, inclement weather etc;
- Commercial risks e.g. delays to contract award, escalation, scope creep etc; and
- Commissioning risks borne by GWM Water.

Project Cost estimates

Table 8 shows the output from the risk analysis giving the P90 and P50 estimates. P90 represents that there is a 90% probability that the cost of the project will not exceed the estimated cost.

Table 8 WMPP – Outcome of @ Risk analysis

Modelled costs	**@Risk model output estimate $m**	
	P90	**P50**
Base cost with inherent risks & opportunities	667.3	662.1
Unplanned risks	32.8	25.3
Base cost with inherent and unplanned risks & opportunities	696.5	**687.6**
Base cost with inherent and unplanned risks & opportunities escalated for 5 year programme	728.8	719.8

Evans and Peck recommended that the P90 cost estimate would be 'a realistic target to be aiming for at this stage of the project'.

GWM Water subsequently commissioned a diagnostic review of the cost estimate from Flagstaff Consulting, which concluded:

- *"The methodology adopted for the development of the new model was appropriate to the level of design information available and reflected good practice;*
- *The detailed data and modelling reviewed on a sampling basis was found to be reliable and found to be without errors of calculation when subjected to audit on a sampling basis; and*
- *The approach, assumptions and data were based on good evidence and sound judgment, noting that the estimates are reliant on quantity data supplied by GWMW that has not been the subject of independent peer review at this stage."*

The review went on to note:

- *"The inherent limitations in the quantities deduced by GWMW from the concept designs for systems 3. 4, 6 and 2 Distribution;*
- *The cost model does not represent a 'bottom up' cost estimate of the type that we would normally prepare for such a project or would be the methodology likely to be used by construction contractors tendering for contracts on the project; and*
- *There may be some shortcomings in the provision of field productivity and cost information, therefore costs for System 1 and the System 2 trunk pipeline reported in the model still deserve to be treated with some circumspection.*

We therefore recommend that as soon as the GWMW designs for Systems 2, 3, 4 and 6 are optimised and peer reviewed that a 'bottom up' cost estimate be produced for each system….. In the interim we would not recommend use of a value lower than the ''P90' estimate for ongoing planning and consideration of funding requirements."

GWM Water, in its Program Review report dated August 2007 has adopted a cost estimate of $688m with planned completion of the project in three years and not five. This represents the P50 modelled value without escalation from the original modelling. GWM Water's reasons for selecting this figure are as follows:

- The proposed project acceleration should result in lower contract mobilisation costs where contractors can move straight into a new contract from an ongoing one, reduce owner costs slightly and minimise the impact of inflation; and
- Unplanned risks of $25m may not all materialise and thus this sum exists as a contingency.

Review Team opinion on the cost estimate

The Review Team agrees with the findings of the Diagnostic Review that the methodology and assumptions for the cost modelling are appropriate. Uncertainties remain but are reducing slowly as the designs for the later Systems are progressed.

We have reviewed further information available since the Program Review by GWM Water and found that::

- SS 1&7 contract is nearing completion and the final cost is forecast to be close to the original contract value;
- SS 2 Trunk mains, pump stations and storages has been let as a lump sum variation to the above contract at a value less than the estimate;
- SS 2 Distribution contract was awarded in November 2007 at a value less than in the estimate;
- Overall, costs for SS2 are about 10% less that the project estimate in the Program Review but the assessed risks remain; and
- Detailed designs are nearly complete for SS 3 &4. Total pipe length required is similar to the figures in the original estimate. The proportion of each diameter required varies, with less steel main required but more PVC/PE. The detailed cost estimate for the revised quantities had not been prepared at the time of our visit, but it appears that it should not differ significantly from the original estimate.

In addition, the project estimate now assumes completion of the project in three years with all remaining tenders being let by July 2008. We note that no allowance is made at all for inflation in the project cost estimate, which uses prices from March 2007. In our view there

will be some impact of inflation on tender prices to be received in 2008, due mainly to cost pressures on energy and raw materials for PVC/PE pipes. A 3% increase due to inflation would add some $10m to the estimate for the systems yet to be tendered.

Unplanned risks, which do not include inflation either, have been assessed on a logical basis for the project estimate. The sum of $25m appears to all be considered by GWM Water as a contingency sum for the project. We note however that the logic of the methodology means that there is a 90% probability that the unplanned risk expenditure will exceed the P10 value of about $17m. In our view, GWM Water will need to regularly update its estimates for unplanned risks as the project progresses and actively manage the risk allowance.

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Whatever proportion of funds GWM Water finally contributes to the project after the funding gap is closed, it will still remain liable under the Project Development Agreement for any further cost overruns. If inflation and unplanned risks should materialise such that the $25m sum is exceeded, then to complete the project, GWM Water has an option to delay channel decommissioning, included in the project estimate at some $12m, until later in the period before any requirement to defer other capital projects would arise. If final costs are below the project estimate budget, then GWM Water is likely to benefit as it would need to inject less capital than planned.

4.5.3 WMP Project Deliverability

Progress to date

Good progress has been achieved since the project started in May 2006, with some 2130 km of pipe laid by October 2007. Some delays have occurred to the original contract programmes, mainly through reallocation of resources by the contractors to accommodate GWM Water's acceleration of the SS 2 programme, as a drought mitigation measure. Delays have generally been about 2 months, with some pump stations and storages as much as four months delayed.

Governance and project management

Robust project governance arrangements are in place including a Project Council, Project Control Group (responsible for delivering the project through GWM Water) and a Project Community Reference group.

The project team, under its Project director, reports to the Project Control Group. The team comprises some 60 staff, with some positions still to be filled.

Appropriate systems appear to be in place for stakeholder liaison and the monitoring and control of construction progress, contract and other project expenditure, environmental management and change control. We recommend that GWM Water regularly reassesses and actively monitors and controls the potential costs from unplanned risks.

Contractor future capacity

Contracts are in place at present for SS 1 & 7, SS2 and SS5. To complete these, a further 2020 km of mains needs to be laid by July 2008. An additional 4520km is needed for SS3, SS4, and SS6. This implies that laying rates in the field will need to average some 70% greater than those achieved on the project to date. We note however that much less large diameter main is required and recently introduced 'plough' techniques for laying small diameter PE pipe have significantly increased laying rates for these. The proposed programme will however, require a significant ramping up of contractor resources, which may exceed the capacity of the two companies currently working on the project. To overcome this, GWM Water will pre-qualify a tenderer list and intends to tender SS3 and SS4, such that companies can bid for both or either system to try to draw in more capacity to the area. Such acceleration may result in a premium being added in tender prices.

Material supply capacity

GWM Water has carefully considered the pipe supply position and has noted that lead times of up to six months can occur for the supply of large diameter steel mains. It is mitigating this through letting a separate supply only contract for the remaining large diameter pipes early in the process. We consider this approach to be appropriate but it will mean that GWM Water will carry the risk of any delays in delivery. To date GWM Water has not perceived any issues with the capacity for supply of PVC and PE pipes and intends to leave this to be done through the contract. In our view this is also the appropriate approach. Due to the major lengths involved, risks to supply and delivery are best carried by the contractor.

For pump stations, long lead times can be expected for some locally assembled items such as electrical switchboards. This has the potential to delay completion by a few months. This is not seen as a significant issue as some pump stations will only be needed as demand increases on the system. Care will be needed to ensure that any critical installations are not significantly delayed.

GWM Water will also need to consider its procurement of the large number of tappings and meters it will need to connect customers as the project is commissioned.

Potential for programme slippage

Programme implementation, as envisaged, could be affected for a number of reasons, particularly:

- Delay in approval of additional funding;
- Tenders received with costs or terms not acceptable to GWM Water;
- Bad winter weather, which would slow pipe laying significantly; and
- Unforeseen delays in the supply of pipes.

Implications for GWM Water are that parts of the project could be delayed for a number of months and that SS6 may not be completed in time for the summer of 2009, requiring a further channel run in that year. Delays could also result in additional costs for project management and contract claims.

4.5.4 Summary for WMPP

In our view, subject to additional funding being made available early in 2008 and tender prices being locked in by mid 2008, GWM Water should be able to manage the project through to completion within the project estimate at close to its projected time frame of three years. We recommend that GWM Water regularly reassesses the risks and implements active management and control of any future disbursement of the $25m unplanned risk element of the estimate.

Table 9 below, shows the most recent forecast expenditure profile compared with that included in the Water Plan.

Table 9 WMPP – Expenditure profile

Expenditure forecast ($m)	2006/07	2007/08	2008/09	2009/10	Total
Water Plan	140	282	236	30	688
GWM Water forecast Nov '07*	140	282	236	30	688
Source of funds:					
Government	137	197			334
GWM Water	3	85	18		106
To be agreed			218	30	248
Total	140	282	236	30	688

We note that the programme, in the Program Review Report, differs slightly from this expenditure forecast and shows SS6 commencing in July 2008, which would defer $8m from 2007/08 to 2008/09.

In addition, for each month of delay in the award of tenders for SS3 and SS4 beyond early April 2008, some $28m would be deferred from 2007/08 to 2008/09 and also possibly into 2009-10.

4.6 Other major capital projects

In the Water Plan, GWM Water has identified other major capital projects as listed below:

	Cost ($m)
Nhill Treated water supply	10.9
Edenhope water supply security	2.2
Stawell WWTP	2.2
Rupanyup Sewerage Scheme	2.5
Lake Bolac new sewerage scheme	2.1
SCADA	3.1
Dam safety works at Lake Lonsdale	2.7
Natimuk treated water supply	1.5
St Arnaud's WWTP upgrade	1.9
Jeparit Treated water supply	2.2
Taylor's Lake embankment works	1.7

We have reviewed available documentation for these projects. Our views on the justification of the need, the basis and robustness of the cost estimate, timing within the period and any potential for deferral for each project are set out in detail in Appendix A.

In summary, these eleven schemes account for 44% of the capital programme in the period, excluding the WMPP. For each the need is clearly justified, being required either under the Statement of Obligations, Directions from DHS or DSE, through customer request and in one case, operational efficiency improvements. Cost estimates for five of the projects are developed at a reasonable level of detail, with option evaluation completed and the scope of works identified. Cost estimates for the other projects are very preliminary, either based on escalated prices from previous studies or based on estimates from similar type works recently completed but without any clear definition of scope at the site itself.

We have identified very little scope for deferral of projects. The Nhill treated water supply is required by the DSE within the Water Plan period, as are other projects within the Country Towns Program. The SCADA project extends an existing project to deliver on operational efficiencies and ensure operational control for the WMPP. Dam safety projects are only

addressing high priority works within the period. Deferral of customer requests for projects to address untreated supplies would mean continuing risks to health.

Also, in our review, we have noted that during GWM Water's prioritisation process, some significant projects, mainly some town water treatment projects related to THM failures and required by DHS, have already been deferred beyond the Water Plan period until options for centralised treatment of the WMPP supply are evaluated. Should some included projects slip then they could be replaced by other schemes where the obligations are already defined.

Other major expenditure has been identified for Infrastructure software and hardware to upgrade corporate systems. This amounts to $2m over the period and is supported by a clear strategy for IT improvements.

In addition, motor vehicles replacement is forecast to cost $11m over the period, although this is partly offset by asset disposals of about $6m. GWM Water is projecting a reduction in the number of vehicles in line with its changes in staff numbers as the WMPP is implemented. GWM Water has a clear Motor Vehicle Policy, with acquisition and disposal polices driven by sound commercial practice. To date, the net cost of purchase has provided a significant advantage over leasing of vehicles, although the leasing option is re-evaluated regularly.

In our view, the programme of capital projects included in the Water Plan has resulted from a robust project identification and prioritisation process, which we consider has been rigorous and effective in defining the projects and expenditure needs for the period. Needs are justified and cost estimates are considered reasonable. Of necessity some cost estimates will be preliminary at this stage and will only be developed as the designs are progressed. We are of the opinion though, that GWM Water has capital management processes in place that should allow delivery of individual projects at efficient cost while controlling the overall programme expenditure.

4.7 Asset renewals expenditure

Expenditure forecasts for renewals of major assets are set out in Table 10.

Table 10 Forecast renewals expenditure for major asset classes

	FIRST REG PERIOD			SECOND REG PERIOD					Total
	2005-06	2006-07	2007-08*	2008-09	2009-10	2010-11	2011-12	2012-13	2008-13
Watermains	0.38	0.88	1.00	0.83	0.83	0.83	0.83	0.83	4.15
Sewers	0.08	0.30	0.45	0.25	0.30	0.30	0.40	0.30	1.55
WTP				0.40	0.53	0.50	0.44	0.45	2.32
WWTP					0.03	0.46			0.49
WPS				0.06	0.08	0.10	0.12	0.14	0.50
SPS				0.10	0.25	0.30	0.30	0.30	1.25
Meters				0.31	0.18	0.23	0.24	0.23	1.19

* Forecast - actual to date in 07/08 is $0.32m for Watermains and $0m for Sewers

Assets in this table account for some 82% of the total asset renewal expenditure of $13.8m in the period. Other asset groups not listed include bores, headworks structures and irrigation networks.

Water mains and sewer expenditure profiles reflect historical expenditure as shown in the table. ALCPs are being developed for these assets, but at present insufficient reliable data is available to be able to rely on the model output.

For Water treatment plants, the five year forecast expenditure is drawn from a prioritised list of critical assets identified as being in poor condition by GWM Water staff. This expenditure profile represents about half that derived from the ALCP model, which is being developed for the future but which requires significantly more data to be considered reliable.

For Wastewater treatment plants the forecast expenditure is identified specifically only for those sites where upgrade works are not included elsewhere in the programme.

Meter replacement is an ongoing commitment and will increase over time as the WMPP is fully implemented.

Asset management is a key area of the business where GWM Water has recognised that there were shortcomings in its approach and has taken steps over the last three years to address the issues. Much work has still to be done, particularly with regard to collection of reliable condition and performance data for its assets to make long term forecast of its asset expenditure needs.

For this Water Plan GWM Water has made a short term prediction of need based on historical expenditure levels and available condition data and staff knowledge. In our view the approach adopted is appropriate and we consider that the resulting asset renewal expenditure profile is reasonable. Again capital management processes are in place to ensure that expenditure is targeted effectively.

4.8 Capacity to deliver the capital programme

In the years leading up to the first price review, GWM Water typically underspent its capital budgets for both urban and rural systems, but did achieved expenditure levels of $17m in 2004/05 and $14m in 2005/06.

For the first regulatory period, total capex of $27.3m was set for the two years. In the Water Plan, GWM Water estimates that it will underspend this by $0.7m. Expenditure on the programme, excluding the WMPP, in 2006/07 was about $9.7m against a budget of $13.2m but in 2007/08, GWM Water forecasts spending $16.9m. The internal Business Performance Report shows that at October 2007, four months into the year, it is on track to achieve this. The underspend in the first year resulted mainly from reallocation of resources to higher priority tasks including drought mitigation measures, assisting start up of the WMPP and developing the Water and Wastewater infrastructure service plans and the ALCPs. The impact of this work is clear in the changes that were made to the capital programme in the first period. Some $8.4m, not include din the original estimate, was needed to deliver additional compliance work projects and changes in costs of projects. As a result, original projects totalling some $9.1m were reassessed, reprioritised and deferred.

Over the last two years, GWM Water has been actively changing and improving its capital management processes, learning from its past experience. New approaches are being developed, in particular:

- In addition to traditional tender processes, introducing procurement through ‘alliancing’ arrangements, term contracts for mains laying and in-house Engineering. Procurement and Construction Management (EPCM). This latter approach has been used recently on the Willaura project and although requiring significant in house resources, delivered at a lower cost than is likely to have been achieved through traditional tendering;
- Ensuring a mix of resources to manage projects including consultants for specialist projects, employing treatment expertise in house and improved planning;

- KPIs for the successful delivery of the capital programme linked to staff performance; and
- Improved business case planning to ensure all parts of the business 'buy into' projects.

As a result, GWM Water has developed a capital programme for the Water Plan that, in our view, is more clearly defined than in the past and is supported by appropriate strategies with project needs identified and prioritised. Appropriate planning and procurement processes are being established. While it is likely that some projects may be delayed due to planning or other issues, there appears to be sufficient flexibility to bring forward other projects within the overall programme.

It is reasonable to assume, therefore, that, with continuing and adequate in-house resources, GWM Water has the ability to deliver its planned capital programme for 2008 - 13, which averages expenditure of $15m p.a.

APPENDIX A

Major Projects Planned by GWMWater

Table 11 GWMWater Major Capital Projects

Project	Justification of Need	Forecast Cost in period		Basis of cost estimate	Proposed project timing	Potential for deferral
		($m)	% total capex			
Nhill Treated water supply	DSE directive. DSE directive Feb 2006, under CTWSSP for Nhill water supply to be part of Statement of Obligations and to be included in Water Plan. Community reference group has recommended to GWMW that the water supply be treated to comply with ADW guidelines.	10.90	15%	Appropriate to stage of development. The cost estimate reflects a detailed options evaluation and concept design completed in April 2007, which is thorough and appropriate at this stage of project development. Report identifies cost accuracy as ±30% Final treatment requirements and costs will take account of water quality from the WMPP, which is due to be completed for this area in 2008.	2011-2013 Detailed design start in 2010/11 and completion of project by 2013. Potential to bring forward to end of WMPP in 2009 to utilise available pipelaying capacity.	None. Project programmed for the last two years of the period, the latest time possible for GWM Water to still meet the DSE requirements.
Edenhope water supply security	Obligation to secure water supply. Long term solution sought to resolve loss of lake source and replace temporary poor quality supply	2.20	3%	Very preliminary. Options considered. Estimate based on finding suitable groundwater source within 20km of the town at lower cost than improving treatment of temporary saline source.	2008-10 Hydrogeological study starts in 2008. Project completion planned for 2009/10	None. Ongoing obligation on GWMW to secure supply and minimise environmental impact of brine disposal
Stawell WWTP	Water reuse scheme Request by Regional Development Board to bring forward project to treat to Class A for reuse. Some non compliance with EPA licence parameters	2.23	3%	Preliminary. Options considered. Estimate based on in house procurement of new MBR treatment plant. Similar project ongoing for Warracknabeal. Refurbishment option studied in 2004 is more costly.	2009-11 Potential to integrate with WWTP upgrade for St Arnaud.	Limited. Deferral would mean ongoing licence compliance issues, with need for extensive maintenance of existing plant. Also reuse benefits would not accrue to the community.
Rupanyup Sewerage Scheme	DSE directive. DSE directive Feb 2006, under CTWSSP for Rupanyup sewerage to be part of Statement of Obligations and to be included in Water Plan.	2.52	3%	Very Preliminary. Options not yet considered. Estimate based on recent construction for Minyup sewerage.	2011-13 Preliminary design by 2009. Final Project dates yet to be inserted in funding agreement	None. Project programmed for the last two years of the period, the latest time possible for GWM Water to still meet the DSE requirements

Project	Justification of Need	Forecast Cost in period		Basis of cost estimate	Proposed project timing	Potential for deferral
		($m)	% total capex			
Lake Bolac new sewerage scheme	DSE directive. DSE directive Feb 2006, under CTWSSP for Lake Bolac sewerage to be part of Statement of Obligations and to be included in Water Plan.	2.06	3%	Appropriate. Estimate taken from in house project justification report. Options evaluated in detail. Cost estimate appropriate to stage of the project development. Potential for reuse identified but not included in scheme	2008-10 Detailed design funded for start in 2008. Plan in place to finalise project details and declare Sewerage District.	None. Project already started in 2007/08. Any deferral would put GWMW at risk of not meeting DSE requirements. Potential for ongoing effluent pollution of recreational lake.
SCADA	Operational efficiencies Improved data availability and collection and better operational response times and customer service capability.	3.15	4%	Appropriate. Extensive strategy documentation available. Estimate based on ongoing contract for 1st phase. Options evaluated in detail and 'Alliancing' arrangement with current contractor confirmed as most cost effective approach.	2008-13 New arrangement to start in Jan 2008.	None. Operational efficiencies would be deferred and operation of the WM pipeline system could be compromised.
Dam safety works at Lake Lonsdale	Compliance with obligations under Statement of Obligations. Dam safety risk assessments	2.70	4%	Appropriate. Estimate based on specialist consultant report. In this Water Plan period only those works identified as works requiring immediate action are included. Medium term works are deferred to a later period.	2010-12 Possible incorporation with other similar works	Limited. Already programmed for middle of period. Further deferral would increase risk to GWMW.
Natimuk treated water supply	Community Reference Group request for treated water supply. Current supply is classified non-potable under the Safe Drinking Water Act	1.52	2%	Preliminary. Options considered in outline, Estimate updated from 2004 report and adjusted to reflect recent work on similar facilities	2010 -12	Limited. Continuing risk to health from untreated supply.
St Arnaud's WWTP upgrade	Some non compliance with EPA licence parameters Potential to provide sustainable	1.93	3%	Preliminary. Estimate based on project justification report from 2003, inflated. Options	2008-10 Potential to integrate with	Limited. Deferral would mean ongoing licence compliance

Project	Justification of Need	Forecast Cost in period		Basis of cost estimate	Proposed project timing	Potential for deferral
		($m)	% total capex			
	reuse system			considered but to be re-evaluated for business case.	WWTP upgrade for Stawell	issues, with need for extensive maintenance of existing plant.
Jeparit Treated water supply	Community request for treated water supply	2.28	3%	Very preliminary. Options awaiting decision on potential centralised treatment for WMPP supply. Estimate based on individual treatment plant for similar sized plant recently completed.	2011-13	Limited. At end of period already.
Taylor's Lake embankment works	Compliance with obligations under Statement of Obligations. Dam safety risk assessments	1.70	2%	Appropriate. Estimate based on specialist consultant report. In this Water Plan period, only those works identified as works requiring immediate action are included. Medium term works are deferred to a later period.	2008-10 Possible incorporation with other similar works	Limited. Already programmed for middle of period. Further deferral would increase risk to GWMW.
TOTAL		**33.19**	**44%**			