Halcrow Pacific Pty Ltd

November 2008

Independent Pricing and Regulatory Tribunal (IPART) of New South Wales

Review of Capital and Operating Expenditure for Wyong Shire Council

Final Report

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Independent Pricing and Regulatory Tribunal (IPART) of New South Wales

Review of Capital and Operating Expenditure for Wyong Shire Council

Final Report

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Executive Summary

Introduction

Halcrow has been engaged by the Independent Pricing and Regulatory Tribunal (IPART) to undertake an independent review of capital and operating expenditure associated with the provision of water, wastewater and stormwater services by Wyong Shire Council (Council). This work forms part of the process of reviewing/setting prices for regulated services from 1 July 2009 to cover a period of up five years.

The primary objectives of this review are to assess, across the Council's regulated water, sewerage and drainage businesses, the following:

- the efficiency of Council's operating expenditure for the period from 1 July 2006 to 30 June 2009;
- the efficiency of Council's proposed operating expenditure for the period from 1 July 2009 to 30 June 2014;
- the prudence of Council's capital expenditure for the period from 1 July 2006 to 30 June 2009; and
- the efficiency of Council's proposed capital expenditure for the period from 1 July 2009 to 30 June 2014.

Council's Pricing Submission

Wyong Shire Council submitted its AIR/SIR and Pricing Proposal to IPART on 12 September 2008. The proposal outlines the Council's proposed strategy for the period 2009/10 to 2013/14. Interviews were held with Council on 9-10 October 2008 to discuss the key aspects of its submission. Due to errors in the AIR/SIR submitted to IPART, Council re-issued a final version of the AIR/SIR which was forwarded to Halcrow on 21 October 2008. The revised AIR/SIR is different to the AIR/SIR reviewed during interviews with Council. This has resulted in some re-work, specifically in relation to the need to re-perform analysis of operating expenditure.

We have used the 21 October 2008 submission as the basis of our review. We have endeavoured to obtain assurance over the accuracy and robustness of the data provided, however, a detailed audit of this information is outside the scope of this project.

Operating Expenditure

Wyong's Submission to IPART indicates that operating expenditure has exceeded the levels approved in the 2006 Determination and that Council forecasts that its operating expenditure requirements will increase (in real terms) over the period of the next Determination. This is primarily due to the significant expenditure in the water service and the corporate overhead charge.

Council has reported significant expenditure on demand management measures targeted at managing the Central Coast's water reserve through the drought, and this has been the primary driver of water expenditure during the current Determination period. While Council has identified and quantified much of the extraordinary drought related expenditure over the period 2006/07 to 2008/09, its current water operating expenditure remains significantly greater than that funded by IPART in the last Determination.

In addition, Council's corporate overhead charge is also significantly greater than that funded by IPART at the last Determination. This is due, in part, to the inclusion of administration costs that should be directly allocated to the water and wastewater service. Council has also reported that the reason for the variation between the actual expenditure and the Determination was primarily due to the effect of policy change in 2006/07 whereby it is no longer allocates corporate overheads to capital expenditure. The impact of this is that the total amount of corporate overhead charged to water, wastewater and stormwater is reported as operating expenditure, whereas previously it was split between capital expenditure and operating expenditure.

While we accept that the full extent of the drought had not materialised when IPART undertook its 2006 Determination (and hence consequent cost implications were unknown), the current level of expenditure highlights the disconnect between the operations and expenditure deemed justified and efficient by IPART, and Council's actual operations and budgets. This has reduced our ability to gain assurance that Council's historical levels of expenditure, particularly throughout the past few years, have been prudent and efficient. Council's method of projecting operating expenditure, whereby it rolls forward the total base operating expenditure from the previous year and makes adjustments for known changes means that inefficiencies are likely to be rolled forward. This raises questions as to the prudence and efficiency of Council's operating expenditure projections.

Our review of recycled water operating expenditure has been made in the context of periodic charges and whether Wyong has made allowances for recycled water within its submission. Council's AIR/SIR has not separated out the expenditure associated with its recycled water operations from its water service expenditure, however, Council has provided us with its current best estimates of the operating expenditure associated with its recycled water schemes. We have adjusted Council's proposed water service operating expenditure to exclude expenditure associated with recycled water.

On the basis of our review, we have recommended that some adjustments be made to Council's proposed operating expenditure. We have recommended that adjustments be made where we believe that the proposed expenditure is not efficient, or where we do not consider it reasonable to include these items within the Determination operating expenditure.

In its pricing submission, Council has made some allowances for efficiency. However, the application of efficiency allowances has not been consistent. For water, the efficiency has been applied to labour only, whilst for wastewater and stormwater, the efficiency has been applied to the total operating expenditure. In each case the efficiency allowance is 1%.

We consider that an efficiency allowance of 1% is reasonable, however, consider that some increase over the price path period would also be appropriate. Furthermore, we consider it appropriate to apply the efficiency to the total operating expenditure for all services, not only wastewater and stormwater.

Council's proposed and Halcrow's recommended operating expenditure for the price path period 2009/10 to 2012/2013 is summarised in **Table E1**.

Table E1 Proposed and Recommended Operating Expenditure ($000 2008/09 real)

	2009/10	2010/11	2011/12	2012/13	Total
Council Submission (Table 3.5 AIR)					
Corporate Overheads[1]	18,772	17,771	17,506	17,229	71,277
Water	13,499	14,581	15,132	14,666	57,878
Wastewater	9,542	9,737	9,922	10,111	39,312
Stormwater	1,441	1,652	1,890	2,137	7,120
Total Proposed Opex (post-efficiency)	**43,254**	**43,741**	**44,450**	**44,143**	**175,587**
Halcrow Recommended					
Corporate Overheads[2]	9,698	9,778	9,847	9,917	39,240
Water	16,178	17,697	18,309	17,921	70,105
Wastewater	11,646	11,954	12,211	12,477	48,288
Stormwater	1,016	1,030	1,045	1,064	4,155
Total Recommended Opex (post-efficiency)	**38,539**	**40,458**	**41,412**	**41,378**	**161,787**
Add back efficiency already applied					0
Water	48	49	51	52	200
Wastewater	112	94	96	97	399
Stormwater	9	10	10	10	40
Halcrow Recommended					0
Corporate Overheads[2]	9,698	9,778	9,847	9,917	39,240
Water + add back efficiency already applied	16,226	17,746	18,360	17,973	70,305
Wastewater + add back efficiency already applied	11,759	12,047	12,307	12,573	48,687
Stormwater + add back efficiency already applied	1,025	1,040	1,056	1,074	4,195
Total Recommended Opex (pre- efficiency)	***38,708***	***40,611***	***41,570***	***41,537***	**162,426**
Efficiency Target	1%	1%	1.25%	1.25%	0
Efficiency Allowance[3]	(387)	(406)	(520)	(519)	(1,832)
Recommended Efficiency					0
Corporate Overheads	(97)	(98)	(123)	(124)	(442)
Water	(162)	(177)	(229)	(225)	(794)
Wastewater	(118)	(120)	(154)	(157)	(549)
Stormwater	(10)	(10)	(13)	(13)	(47)

	2009/10	2010/11	2011/12	2012/13	Total
Recommended Opex (post-efficiency)					
Corporate Overheads	9,601	9,680	9,724	9,793	38,798
Water	16,064	17,568	18,130	17,748	69,511
Wastewater	11,641	11,927	12,154	12,416	48,138
Stormwater	1,015	1,030	1,043	1,061	4,148
Total Recommended Opex (post-efficiency)	**38,321**	**40,205**	**41,050**	**41,018**	**160,594**

Note (1) The Corporate Overhead Charge for the water service has been adjusted (refer **Section 2.2.2**), and hence this figure does not tie to Table 3.5 of Council's AIR/AIR.
(2) Includes reallocation of corporate overhead from stormwater service 'Other Provisions'
(3) The efficiency target has been applied to the water, wastewater and stormwater services and to the corporate overhead charge.

Capital Expenditure

Wyong's Submission to IPART indicates that capital expenditure during the current Determination period has been greater than the levels approved by IPART in the 2006 Determination.

Within the constraints of an operating framework driven by the ongoing and worsening drought conditions within the Central Coast, we found expenditure against the 2006 Determination to be broadly prudent. Under normal operating conditions, we do not believe that the Gosford and Wyong Combined Water Authority (GWCWA) would have concurrently pursued multiple water resource strategies. As such, the GWCWA probably would not have progressed a number of the projects, particularly the JWS Groundwater Extraction Projects. However, the ongoing and worsening drought conditions necessitated the need to fast track a number of Drought Contingency Projects, in order to secure additional water resources.

As a result of this, projects within the 2006 Determination have been delivered at the expense of efficiency. Costs have escalated significantly from those initially proposed, and in the case of the JWS Groundwater Extraction Projects, available yield has been less than anticipated. Projects have been separately procured and delivered on a piecemeal basis, which reduces the scope to realise procurement efficiencies which are available for schemes of this nature.

The concurrent development of alternative water resource options has also increased the risk of redundant assets (i.e. groundwater sources), particularly when cheaper alternative water resource options (i.e. Hunter Connection) are available.

Based on the circumstances discussed above, we do not believe there were any realistic opportunities for GWCWA to procure these assets more efficiently. However, as a result of this, and the coincident development of an appropriate asset management framework, Council should be in a better position to appropriately plan, justify, define and deliver future programs of work. This will provide future opportunities for Council to procure larger/clustered programs of work that will realise economies of scale and reduce procurement/management costs. We consider that introduction of the above mentioned practices could yield a 5-10% reduction in the overall cost of future capital programs.

In considering the overall capital program proposed for delivery during the 2009 Determination period, our recommendations have largely been based on our review of a representative sample of projects. We reviewed six (6) schemes (water, wastewater and stormwater) in detail. When compared to the overall capital program, these schemes represent 25% of the program in terms of capital value (excluding recycled water).

Based on our review of Council's proposed capital program for the 2009 Determination period in conjunction with its historical capital expenditure, we have assessed that the expenditure is both prudent and efficient.

Council has not separately reported its recycled water schemes within its AIR/SIR. In our recommended capital expenditure for the water service we have excluded Council's recycled water schemes.

In light of the fact the Council is in the process of developing a sound asset management framework and are looking at the way in which programs of work can be delivered more efficiently, we consider that the potential for efficiencies exist and that Council should actively pursue and capture these. As such, we have recommended an efficiency target profile applicable to the overall capital program.

Our proposed and recommended capital expenditure for the coming Determination period is shown in **Table E2**.

Table E2 Proposed and Recommended Capital Expenditure ($000 2008/09 real)

	2009/10	2010/11	2011/12	2012/13	Total
Council's Submission					
Water	93,385	25,735	7,058	10,724	136,902
Wastewater	32,048	9,989	9,314	9,437	60,788
Stormwater	9,074	7,903	8,023	8,122	33,122
Total Proposed Capex	134,507	43,627	24,395	28,283	230,812
Halcrow Recommended					
Water	92,880	23,835	7,058	10,724	134,497
Wastewater	32,048	9,989	9,314	9,437	60,788
Stormwater	9,074	7,903	8,023	8,122	33,122
Recommended Capex	134,002	41,727	24,395	28,283	228,407
Efficiency Target (%)	0.0%	1.0%	2.0%	3.5%	0.0%
Efficiency savings					
Water	-	-238	-141	-375	-755
Wastewater	-	-100	-186	-330	-616
Stormwater	-	-79	-160	-284	-524
Capex (post - efficiency)					
Water	92,880	23,597	6,917	10,349	133,742
Wastewater	32,048	9,889	9,128	9,107	60,172
Stormwater	9,074	7,824	7,863	7,838	32,598
Total capex (post-efficiency)	134,002	41,310	23,907	27,293	226,512

1 Introduction

1.1 Background

Halcrow has been engaged by the Independent Pricing and Regulatory Tribunal (IPART) to undertake an independent review of capital and operating expenditure associated with the provision of water, wastewater and stormwater services by Wyong Shire Council. This works forms part of the process of reviewing/setting prices for regulated services from 1 July 2009 to cover a period of up five years.

1.2 Scope

The focus of this project is to provide a review of the adequacy and appropriateness of Council's proposed level of capital and operating expenditure. The adopted levels of such expenditure are a key driver in setting the prices that can be charged by Council in respect to the regulated services that it provides.

The primary objectives of this review are to assess, across the Council's regulated water, sewerage and drainage businesses, the following:

- the efficiency of Council's operating expenditure for the period from 1 July 2006 to 30 June 2009;
- the efficiency of Council's proposed operating expenditure for the period from 1 July 2009 to 30 June 2014;
- the prudence of Council's capital expenditure for the period from 1 July 2006 to 30 June 2009; and
- the efficiency of Council's proposed capital expenditure for the period from 1 July 2009 to 30 June 2014.

An assessment of asset management frameworks, plans and practices has been necessary to assist in evaluating the appropriateness of capital expenditure and to enable the Tribunal to consider the extent to which infrastructure management is consistent with maintenance of long term service delivery capacity.

1.3 Approach

Wyong Shire Council submitted its AIR/SIR and Pricing Proposal to IPART on 12 September 2008. The proposal outlines the Council's proposed strategy for the period 2009/10 to 2013/14. Interviews were held with Council on 9-10 October 2008 to discuss the key aspects of Council's submission. Some

additional information was requested during the interviews, which Council subsequently provided.

Due to errors in the AIR/SIR submitted to IPART, Council re-issued a final version of the AIR/SIR. This was forwarded to Halcrow on 21 October 2008. The revised AIR/SIR is different to the AIR/SIR reviewed during interviews with Council. This has resulted in some re-work, specifically in relation to the need to re-perform analysis of operating expenditure.

We have used the 21 October 2008 submission as the basis of our review. We have endeavoured to obtain assurance over the accuracy and robustness of the data provided, however, a detailed audit of this information is outside the scope of this project. We have been unable to reconcile the data reported in Table 3.1 and Table 3.2 of the AIR/SIR to Table 3.5 and Table 3.6 of the AIR/SIR. We understand that the difference is due to the reallocation of some expenditure items, the impact of re-classifying the Hunter Connection expenditure as capital, and a correction for the over-charging of corporate overheads. Each of these adjustments was made after submission of the original AIR/SIR. As we are required to undertake our analysis by service, we have based our analysis of Council's operating expenditure on the figures reported in Table 3.5 and Table 3.6. Following our initial review, Council has indicated that the corporate overhead charges reported in Table 3.5 and Table 3.6 for the water service incorrect. The corrected figures are provided in Section 2.2.2. We note that even after adjusting Table 3.5 and Table 3.6 for the correction, the figures do not reconcile with Table 3.1 and Table 3.2. This issue has not been resolved.

We have reported expenditure values in 2008/2009 real terms as directed by IPART and have adjusted Wyong Shire Council's reported expenditure using the inflation based indexes provided by IPART. Where figures are reported in a different price base, this is specifically noted.

1.3.1 Review of Operating Expenditure

In undertaking the review of actual and forecast operating expenditure, the following tasks were completed:

- Review of the actual and forecast operating expenditure from 2006/07 to 2013/14, to the extent necessary to undertake the following tasks.
- Review Council's functions and costs of operations, including:
  - operations, support functions;
  - maintenance and servicing activities; and
  - administration and overheads (both direct and corporate allocations).
- Identification of the amounts spent on each function.

- Review of the appropriateness and performance of each of these functions against industry best practice.
- Review of the cost effectiveness and efficiency of the functions.
- Review of the variation in operating expenditure from what was proposed in the 2006 Determination.
- Identification of the reasons for any costs higher than normal commercial levels, for example government ownership, awards and conditions, operating environment, staffing levels, assets, technology, or other factors.
- Identification and analysis of Council's potential for cost reduction for each function and make reasoned recommendations about efficiency gains that IPART can consider when determining efficient operating expenditure levels for price setting. Where current expenditure in an area of operations was assessed as inadequate, specification and quantification of recommended additional expenditure was undertaken.
- Assessment of the efficiency of Council's proposed level of operating expenditure for each year between 2009/10 and 2013/2014. For each year, we developed reasoned estimates of the level of operating expenditure that is required to efficiently undertake Council's regulated functions.
- Identification and analysis of any transfer of costs between regulated and unregulated parts of Council's business providing comment on any such transfers which we consider inappropriate.
- Identification of the potential for operating efficiencies arising from capital projects (including avoided costs through the implementation of recycled water projects), together with quantification of these efficiencies.
- Identification and segregation of operating costs associated with recycled water services.
- Assessment of the potential for efficiency saving to be achieved within the operating expenditure budget over the period 2009/10 to 2013/14 and provision of evidence and reasoning to support the proposals.

1.3.2 Review of Capital Expenditure

In undertaking the review of actual and forecast capital expenditure, the following tasks were completed:

- Identification of capital works programs and projects from 2006/07 to 2013/14, separately identifying projects satisfying IPART's materiality threshold of $1,000,000.
- Detailed investigation into the project planning and actual outcomes for at least 10 per cent (by number) of the projects satisfying IPART's materiality threshold of $1,000,000, also accounting for at least 10 per cent of the total value of the capital program.
- Review of the outputs of the capital program against the output measures agreed at the 2006 Determination.

- Assessment, against industry best practice and the practices that existed at the time of the 2006 Determination, of Council's asset management frameworks, processes and plans, and the rigour of its approach to managing the whole life of assets having regard to the following:
  - current and future service outcomes and performance requirements, including customer service and environmental outcomes;
  - the way in which Council manages the risks associated with asset failure or underperformance;
  - the clarity of drivers for capital expenditure; and
  - minimising costs over the life of the assets.
- Assessment of any particular concerns or issues relating to the process for determining and prioritising future infrastructure expenditures for Council.
- Assessment of the prudence of Council's capital expenditure for the period from 2006/2007 to 2008/2009 and nomination of a value for any capital expenditure considered imprudent. Prudence has been assessed against identified drivers and variations from capital expenditure proposals identified at the 2006 price review have been examined.
- Assessment of the efficiency of Council's capital expenditure program for the period from 2009/2010 to 2013/2014 and provision, for each year, of reasoned estimates (by program) of the level of capital expenditure that is considered efficient in order for Council to undertake its business and functions.
- Recommend capital expenditure values for IPART's modelling purposes.
- Identification and segregation of the capital works projects associated with assets for which developers will either contribute to the cost of provision or will build and possibly hand over to Council and reconcile actual and proposed developer funded capital expenditure with forecast capital expenditure in Development Servicing Plans.
- Identification and segregation of the capital works projects associated with assets for which other external parties will either contribute to the cost of provision or will build and hand over to the agency.
- Identification and segregation the capital works projects associated with recycled water assets.
- Identification of the potential for and quantification of any deferred or avoided capital costs arising from recycled water projects.
- Identification of the potential for efficiency savings to be achieved by Council within the capital expenditure program over the period 2009/10 to 2013/14 and provision of evidence and reasoning to support the proposals.

1.4 *Gosford and Wyong Council's Water Authority*

Planning in relation to the Central Coast water supply headworks is undertaken by Gosford Wyong Councils Water Authority (GWCWA). The GWCWA recommends to the Councils strategies relating to development and management of the joint water supply (JWS) catchments, dams, weirs, treatment and major distribution facilities.

All expenditure (operating and capital) expenditure associated with JWS assets is split according to a pre-defined contractual arrangement between the Councils based on volume of water used. This generally equates to a 50%:50% (approximately) split. For the purposes of reporting proposed expenditure in its AIR/SIR, Council has reported 50% of the costs associated with these JWS schemes.

The Councils, through the GWCWA, have developed and adopted a long term water source planning strategy, WaterPlan 2050. This plan details the Council's strategies for managing and securing water supplies to ensure the growing population of the Central Coast has sufficient water to meet its needs for the next fifty (50) years.

2 Operating Expenditure

2.1 *Overview*

This section discusses the issues related to operating expenditure in Wyong Shire Council's AIR/SIR submission. As noted in **Section 1.3**, we have been unable to reconcile the data reported in Table 3.1 and Table 3.2 of the AIR/SIR to Table 3.5 and Table 3.6 of the AIR/SIR. We have based our analysis of Council's operating expenditure on the figures reported in Table 3.5 and Table 3.6.

Wyong's Submission to IPART indicates that operating expenditure has exceeded the levels approved in the 2006 Determination and that Council forecasts that its operating expenditure requirements will increase (in real terms) over the period of the next Determination. This is illustrated in **Figure 1** which shows Council's historical and proposed operating expenditure, and the expenditure funded by IPART in the 2006 Determination.

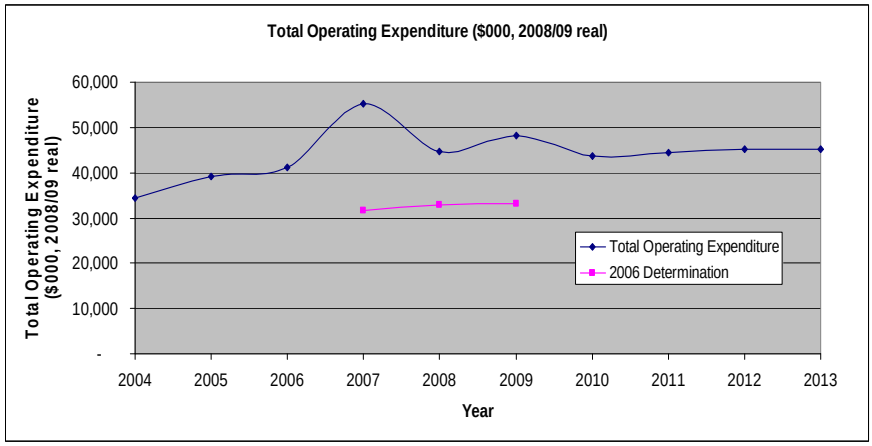

Figure 1 Total Operating Expenditure vs Determination ($000, 2008/09 real)

Council has reported significant expenditure on demand management measures targeted at managing the Central Coast's water reserve through the drought, and this has been the primary driver of expenditure over the Determination period. It is forecasting above CPI increases in its operating expenditure over the coming Determination period.

2.2 General

2.2.1 *Budget Overruns and the review of historical spend*

In accordance with the *Local Government Act 1993*, Council prepares and publicly exhibits on an annual basis, a Management Plan that outlines the activities and budgets for all of Council for the coming three financial years. The activities and budgets of the regulated business are included within the Management Plan and the budgeting process of the regulated business is structured to correspond with the preparation of the Management Plan. Longer term (forecast) budgets for the regulated water business are developed using Council's Water Model. It calculates the total projected operating expenditure by taking the previous total years' actual expenditure and making adjustments for expected changes to the operating environment.

Council has in place clearly defined procedures for the tracking and reporting of expenditure against budget. Budgets are reviewed on a monthly basis and budget owners are required to explain any variations in expenditure. These reports are reviewed by relevant Council executives and general managers, and reporting to Councillors is on a quarterly basis. Increases in budget are controlled via a pre-defined approval process. From the information provided by Council during the interviews, the reporting and budgetary process and associated controls appear well defined and robust.

However, there appears to be a distinct disconnect between Council's annual budgets and those allowed by IPART in the Determination. Council's annual budgets for the 2006/07 to 2008/09 period bear little resemblance to those determined by IPART. Council has indicated that there is significant lead time in preparation of the Management Plan as the document must be on public exhibition for some time, and sufficient time must be allowed to consider public submissions before the Plan is adopted by Council (prior to the new financial year). As such, the 2006/07 Management Plan was completed and adopted before the final IPART Determination was received. The annual budgets for 2007/08 and 2008/09 contained extensive drought management and mitigation expenditure. While these expenditure items were not contained in the expenditure allowed by IPART in the Determination, it is a legal requirement that any planned expenditures be approved by Council, through the Management Plan adoption process.

We note that Council's operating expenditure is categorised according to the reporting categories in the Management Plan rather than by the activities or items identified by IPART. While we understand that Council has adopted this approach to remain consistent with the Management Plan, this has complicated our analysis of the variation between Council's historic expenditure and that set by

IPART in the 2006 Determination. This in turn has frustrated our efforts to gain sufficient assurance that Council's historical expenditure has been prudent and efficient. In addition, due to differences between the reporting categories used internally by Council and those in the AIR, it has not been possible for Council to directly extract data from its general ledger to match IPART's reporting categories. This has resulted in large reconciling items which have been reported as 'Corporate Overheads' (in Table 3.6 of the AIR). Council has recently implemented a new budgeting tool which allows easier extraction of expenditure by Item. This should enable more accurate reporting against IPART's reporting categories in the future, and should reduce expenditure currently reported as 'Corporate Overhead'.

2.2.2 *Allocated proportion of Corporate Opex (Corporate Overhead Charge)*

Wyong Shire Council provides water, wastewater and stormwater services that are price regulated, as well as general Council operations such as roads, parking, urban planning and recreational services that are not regulated. In order to ring-fence expenditure incurred by the regulated business, Council uses separate general ledger accounts for its water, wastewater and stormwater services. Where Council's unregulated business areas undertake activities for the regulated water business, the expenditure incurred is charged back to the regulated business in the form of a corporate overhead charge. The activities undertaken by the unregulated business areas include Finance, Information Management, Legal Services, and Customer Services.

Council uses a corporate overhead model in order to calculate the annual overhead charge. The model allocates shared corporate costs to non-administration related areas of the Council (for example, Roads, Urban Planning, Water, Wastewater, Stormwater, etc). Cost drivers are assigned to activities in each area, and are used to allocate expenditure to each business unit. We understand that the overhead model is audited separately each year as part of the annual financial audit of Council's accounts.

We have reviewed the model used to allocate corporate overheads for the 2007/08 year. On the basis of our review, we generally consider the method used to allocate overhead reasonable. However, there are a number of cost drivers that rely on management estimations of time spent on regulated activities. As Council staff do not complete timesheets, there is no other means currently in place by which these overheads can be allocated. This method of cost allocation is highly subjective and cannot be readily substantiated. We recommended that Council implement some form of timesheet system in order to better track the actual time spent on regulated activities, thereby enabling it to better justify the overhead allocation.

Council has indicated that while it currently uses a timesheet management system for its outdoor/operational staff, direct charging is not always possible. This is because many functions are performed across the organisation, and cannot be directly charged. In addition, it does not consider it practical to expect employees such as Managers, Directors and the General Manager to directly allocate their timesheets each week. Council indicated that an allocation through its corporate allocation model is the only practical method for allocating these costs.

Corporate Overhead Charge vs Determination

Council's corporate overhead charge has significantly exceeded that funded by IPART in the 2006 Determination. **Table 1** provides a breakdown of the corporate overhead charge for each year of the current Determination period.

Table 1 Corporate Overhead Spend vs Determination ($000, 2008/09 real)

	2006/07	2007/08	2008/09	Total
Determination	6,364	6,473	6,693	19,530
Actual	26,649	19,389	24,299	70,337
Variance	+20,286*	+ 2,916	+17,606	+50,807
Variance (%)	319%	200%	263%	260%

Note (*) - The 2006/07 Corporate Charge includes $3.2M contribution to Hunter Water for the Hunter Connection.

Council has reported that the reason for the variation between the actual expenditure and the Determination was primarily due to the effect of policy change in 2006/07 whereby it is no longer allocate corporate overheads to capital. The policy is in accordance with Australian Accounting Standards and the Local Government Code of Accounting Practice. The impact of this is that the total amount of corporate overhead charged to water, wastewater and stormwater is reported as operating expenditure, whereas previously it was split between capital expenditure and operating expenditure.

Figure 2 shows the historical and proposed corporate overhead charge. It shows the increase in the Corporate Overhead Charge from 2006/07, and the significant variation between the 2006 Determination and Council's actual expenditure.

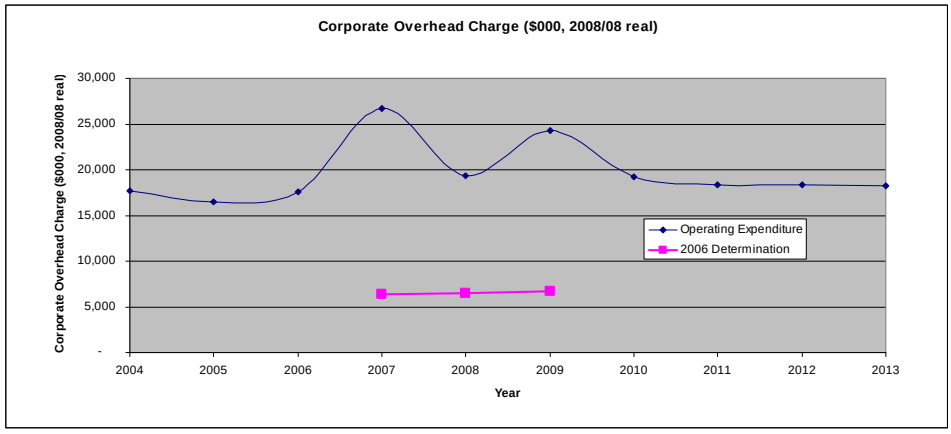

Figure 2 Historical and Proposed Corporate Overhead Charge ($000, 2008/09 real)

Council has used the 2007/08 Corporate Overhead Charge as the basis for projections. A breakdown of the corporate overhead charge for 2007/08 is provided in **Table 2**.

Table 2 Corporate Overhead Charge for 2007/08 ($000, 2008/09 real)

	Water Service	Wastewater Service	Stormwater Service	Total
Corporate Overhead (Council's General Fund)	4,869	3,337	2,050	10,256
Joint Water Supply Administration	575	0	0	575
Sewer/Water Administration Charge	2,006	1,475	0	3,482
Contribution to Drainage	2,194	2,957	0	5,151
Adjustment Factor	-74	0	0	-74
Total	9,571	7,770	2,050	19,390
% overhead allocated by model	51%	43%	100%	53%

Note (*) – Figures taken from Council's Water (financial) Model.

As shown in **Table 2**, approximately 53% of the corporate charge is allocated using the model. Hence, the variation in expenditure attributable to the change in accounting policy would have only had an impact on this portion of the charge.

The remaining element of the corporate overhead charge relates to administration and a contribution to drainage. The administration charges are directly incurred by

the regulated business, and include salaries, training, office expenses incurred by the water and sewerage units of Council, and of the JWS. We are of the opinion that these expenditure items should be directly allocated to regulated business, and not be reported within the corporate overhead charge. Similarly, the contribution to drainage is not a corporate overhead, and should not be reported as a corporate overhead charge.

Forecast Corporate Overhead

The Corporate Overhead Charge reported for the water service in Table 3.6 of Council's AIR/SIR is incorrect. Council indicated that adjustments made after submission of the original AIR/SIR as a result of discussions with Halcrow and IPART during the interviews were not reflected in Table 3.6.

Table 3 shows Council's proposed Corporate Overhead Charge for the coming Determination period. The corrected figures are reported for the water service, and they do not correlate with the AIR/SIR. The figures reported for the wastewater and stormwater service are from Table 3.6 of the AIR/SIR.

Table 3 Proposed Corporate Overhead ($000, 2008/09 real)

	2009/10	2010/11	2011/2012	2012/13
Water Service*	9,391	8,980	8,952	8,918
Wastewater Service	7,950	7,540	7,512	7,480
Stormwater Service	1,430	1,250	1,042	831
Total	18,772	17,771	17,506	17,229

Note (*) – these are the corrected figures and are different to Table 3.6 of the AIR/SIR. Council's financial model, used to determine prices, use the corrected figures for the water service.

Council has forecast corporate overheads for the coming Determination period using its Water Model. The 2007/08 corporate overhead charge has been used as a basis for the forecasts, and Council has rolled forward the charge based on the following key assumptions:

General Fund allocation (model) – The general fund allocation is calculated using Council's corporate overhead model. We understand that the future corporate overhead charges have been forecast from the 2007/08 corporate charge. However, we have been unable to tie the 2007/08 general fund allocation calculated by the corporate overhead model to the figures reported in the financial model for the wastewater and stormwater services. **Table 4** shows the differences.

Table 4 Corporate Overhead Charge for 2007/08 ($000, 2007/08 real)

	Water Service	Wastewater Service	Stormwater Service	Total
Corporate overhead per corporate overhead model	4,723	3,832	1,812	10,367
Corporate overhead in financial model	4,723	3,237	1,988	9,948
Difference	-	(595)	176	(419)

We have been unable to resolve this issue within the time constraints of this review period.

Council has increased the Council's general fund operating expenditure (from which the corporate overhead is calculated) to account for property growth and increases in salary and wages above inflation. This equates to an increase of approximately 0.8% per annum of the general fund operating expenditure. This has then been allocated to water/wastewater/stormwater using a 10%/10%/5% split, which is slightly lower than the actual split from 2007/08 (13%/11%/5%). Based on our review, these increases appear reasonable.

In the 2008/09 Wyong Shire Council Management Plan, Council has stated that if operational control and assets are taken from Council (with the formation of a Central Coast Water Board), this will trigger significant financial, staffing and procedural issues for Council and the financial impact on the General Fund is expected to be in excess of $6M/annum. Given that the corporate overhead charge is designed to only re-coup expenditure for activities undertaken for the regulated business we sought clarification from Council as to the exact nature of the financial impact on Council.

Council indicated that its finance staff undertook a detailed investigation of costs allocated to the Water and Wastewater business to identify and quantify the financial impact on the General Fund should the business be divested. There are many expenditure items that Council considers fixed and unable to be reduced or recovered from a source other than Council's General Fund. This is the calculated loss to Council from the divestment. Council will still have to operate the administrative building and depots, pay for the computer systems, pay for senior executives and councillor support as well as a wide range of other indirect costs regardless of whether the water/sewer operations are retained or disposed of.

Joint Water Supply Administration – This is primarily made up of salaries (48%), communications expenditure (39%) and consultants' fees (11%). Expenditure has been split between Gosford and Wyong, with Wyong contributing approximately 51-52%. Allowances have been made for above inflation salary increases of 0.7% to 0.9%, which is in line with allowances made for the water and wastewater services (**Section 2.3.3**).

On the basis that these administration costs can be directly allocated to the water service, we recommend that this expenditure be removed from corporate overhead charge. Council has indicated that it will update its financial model to include administration costs directly in operational expenditure rather than corporate overhead.

Administration costs – Administrative costs consist of salaries (57%), general administration costs (38%) and rates and charges (5%). Allowances have been made for above inflation salary increases of 0.7% to 0.9%, which is consistent with allowances made for the rest of the water service (**Section 2.3.3**).

On the basis that these administration costs can be directly allocated to the regulated business, we recommend that this expenditure be removed from corporate overhead charge.

Contribution to drainage – Council has included the contribution to drainage within the corporate charge to the water and sewerage services. The contribution to drainage has been calculated as the shortfall in income from the stormwater service, i.e. the difference between income from the Drainage Service Charge and the annual operating and capital expenditure of the stormwater service. The shortfall has then been split between the water and wastewater services. The shortfall equates to between $1.9M and $3.7M per annum.

On the basis that this item appears to be a shortfall in income rather than operating expenditure, and that it relates directly to the stormwater service, we recommend that this be removed from the corporate overhead charge. In addition, we recommend that this expenditure be excluded from Council's operating expenditure requirement.

On the basis of our analysis of Council's proposed Corporate Overhead Charge, we recommend the expenditure shown in **Table 5**.

Table 5 Proposed and Recommended Corporate Overhead Charge ($000, 2008/09 real)

	2009/10	2010/11	2011/12	2012/13
Water (as advised by Council)*	9,391	8,980	8,952	8,918
Wastewater (Table 3.5 AIR)	7,950	7,540	7,512	7,480
Stormwater (Table 3.5 AIR)	1,430	1,250	1,042	831
Total Proposed Corporate Charge	**18,772**	**17,771**	**17,506**	**17,229**
Less adjustment for				
Administrative costs to be directly allocated to Water Service	2,561	2,637	2,713	2,791
JWS Administrative costs to be directly allocated to Water Service	1,106	1,124	1,144	1,163
Administrative costs to be directly allocated to Wastewater Service	2,262	2,337	2,410	2,485
Contribution to Drainage by Water Service	1,582	1,045	895	740
Contribution to Drainage by Wastewater Service	1,989	1,471	1,342	1,207
Recommended Corporate Charge	**9,273**	**9,156**	**9,002**	**8,844**
- Water	4,143	4,174	4,200	4,224
- Wastewater	3,699	3,732	3,761	3,789
- Stormwater	1,430	1,250	1,042	831

Note (*) Council has advised that the corporate overhead charge reported in AIR Table 3.5 is incorrect. The figures reported in this table have been provided separately by Council.

2.3 Water

2.3.1 General

Council provides water services to approximately 61,000 properties in the Wyong Shire area. Its water supply business includes operation and maintenance activities associated with catchment management, treatment and distribution and water harvesting.

The recent drought on the Central Coast was the worst in recorded history. Much of Council's focus during the current Determination period has been on activities to secure its water supply and to reduce the impact of the drought. This has been the key driver of expenditure during the period 2006/07 to 2008/09. Many of the measures implemented by Council and the JWS were short-term contingency actions including a range of demand management activities, development of its recycled water and groundwater schemes, transferring water from Hunter Water, and upgrading its water supply system. Each of these activities contributed to greater than usual operating expenditure over the current Determination period.

2.3.2 Historical Expenditure

Council's operating expenditure has exceeded the levels set by IPART in the 2006 Determination. **Table 6** shows the variation in Council's actual operating expenditure to that proposed in the 2006 Determination.

Table 6 Water Service spend vs Determination ($000, 2008/09 real)

	2006/07	2007/08	2008/09	Total
Determination	12,947	14,154	14,154	41,254
Actual (Table 3.5 AIR excluding corporate overhead)	16,876	13,136	13,241	43,253
Variance	+3,929	- 1,018	- 913	+1,999
Variance (%)	30%	-7%	-6%	5%

The variance between the actual expenditure and the recommended expenditure over the period from 2006/2007 to 2008/2009 is $2M, which represents an increase of 5%. Taking into account the element of the overhead charge that should be directly allocated to the water service (refer **Section 2.2.2**), this becomes approximately $9M (or 22%).

Council has explained that the variation between actual and Determination expenditure was due to a number of items of expenditure that were identified as

necessary after the 2006 Determination was made; and also, that a number of expenditure items included within the Determination were higher than originally anticipated. These are shown in **Table 7**.

Table 7 Additional Water Service Operating Expenditure ($000, 2008/09 real)

	2006/07	2007/08	2008/09
Items in addition to Determination			
Demand Management Activities			
Water Tank Rebate Scheme	1,237	619	619
Washing Machine Rebates	516	516	206
Governance			
Water Savings Fund	979	979	979
External Consultants - for Water Plan 2050 and Asset Management Planning	1,159	-	-
Subtotal	**3,891**	**2,114**	**1,804**
Items of higher than expected expenditure (due to impact of drought)			
Additional Bulk Water Purchased	984		
Salary & Wages additional	309		
Materials additional	309		
Subtotal	**1,602**	**-**	**-**
TOTAL	**5,493**	**2,114**	**1,804**

The above factors appear to account for the variation between actual expenditure and that funded in the Determination. However, as noted in **Section 2.2.1**, Council tracks and reports operating expenditure against annual budgets that bear little resemblance to IPART's Determination. This means that it is not possible to confirm with certainty that all reconciling items have been accounted for.

The table indicates that a significant element of Council's over-spend was related to the drought and demand management activities. This is particularly evident in 2006/07, which corresponds to the worst year of the drought. Expenditure on washing machine rebates and water tank rebates increased significantly during this time, and corresponds with the increased level of water restrictions. Council indicated that additional expenditure on internal Council programs was also

incurred. These programs were run in parallel with community actions, and were focused on achieving water conservation during the severe drought.

Similarly, the additional purchase of bulk water during 2006/07 corresponds to the period when Council's total system storage level reached a historical low of 12.4% (in February 2007).

Also contributing to the over-spend was payments to the Water Savings Fund, which were not funded in the last Determination. These accounted for close to $1M/annum during the period 2006/07 to 2007/08. Council also spent significantly on development of Water Plan 2050, which was developed in conjunction with Gosford City Council, and sets out the Councils' long term water supply strategy for the Central Coast.

In addition to the above, we understand that Council made purchases of water tanks for Council's properties totalling $258k in 2007/08. While this is not material in itself, expenditure on water tanks for Council's properties should not be funded by the regulated water business. We understand that no additional purchases are proposed for the coming Determination period.

Council has used 2007/08 actual water service operating expenditure as the basis for projections of operating expenditure over the period 2009/10 to 2012/13. Given that much of the over-spend during 2006/07 to 2008/09 was targeted at reducing the impact of the drought, Council has classified this as extraordinary. As such, we expect to see significant downwards adjustments to any forecasts of operating expenditure for the coming Determination period. Council has indicated that, while it agrees with this assessment in general terms, some of the programs will continue into the pricing path to allow a degree of system storage recovery (i.e. Hunter transfers).

While Council has identified and quantified much of the extraordinary drought related expenditure over the period 2006/07 to 2008/09, its current water operating expenditure remains significantly greater than that funded by IPART at the last Determination (taking into account the adjustments identified in **Section 2.2.2**). While we accept that the full extent of the drought had not materialised when IPART made its 2006 Determination (and hence consequent cost implications were unknown), the current level of expenditure highlights the disconnect between the operations and expenditure deemed justified and efficient by IPART, and Council's actual operations and budgets. This has reduced our ability to gain assurance that Council's historical levels of expenditure, particularly throughout the past few years, have been prudent and efficient. Council's method of projecting operating expenditure, whereby it rolls forward the total base

operating expenditure from the previous year and makes adjustments for known changes means that inefficiencies are likely to be rolled forward. This raises questions as to the prudence and efficiency of Council's operating expenditure projections. In **Section 2.7**, we discuss efficiency in more detail, and discuss whether there may be scope for Council to increase the efficiency of its operations.

2.3.3 Proposed Expenditure

Council is proposing to increase its water service operating expenditure over current levels for the coming Determination period. It has proposed a total operating expenditure of $57.9M for 2009/10 to 2013/14, which is equivalent to approximately $14.5M/annum. This compares to a current budget (2008/09) of $13.2M. Council's proposed water service operating expenditure is shown in **Figure 3**.

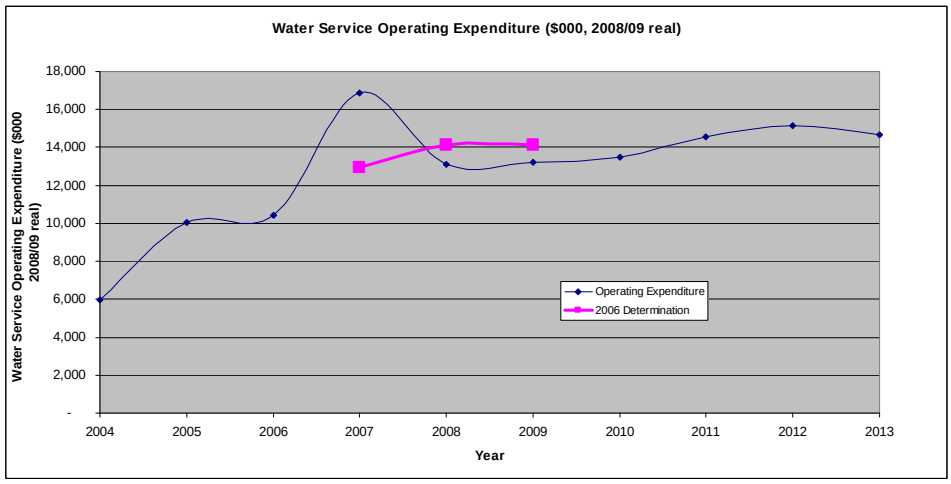

Figure 3 Water Service Operating Expenditure vs Determination ($000, 2008/09 real)

Council has forecast its operating expenditure requirement using its 'Water Model'. The model is updated on an annual basis, at year end. The actual income, operating expenditure, capital expenditure and corporate overhead expenditures for the year is used as the starting point for projections. The forecasts developed by Council for 2009/10 to 2013/14 are based on 2007/08 actual year end figures, adjusted to account for known and expected changes in Council's future operating environment.

Figure 4 and **Figure 5** show Council's proposed expenditure by Item and by Activity respectively.

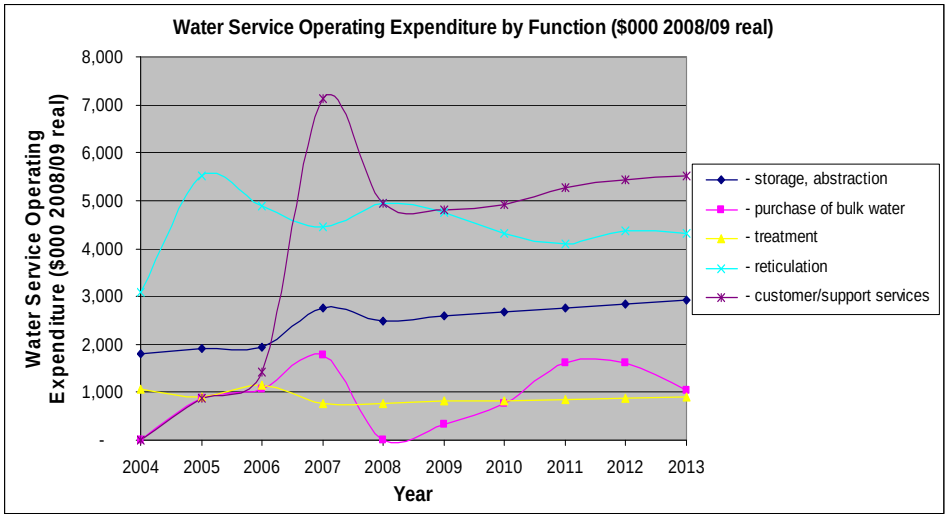

Figure 4 Water Service Operating Expenditure by Function ($000, 2008/09 real)

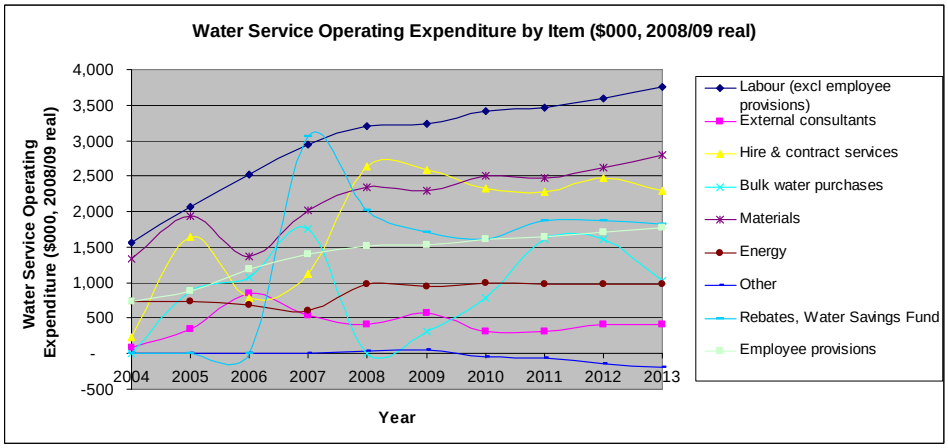

Figure 5 Water Service Operating Expenditure by Item ($000, 2008/09 real)

Council's financial model forecasts operating expenditure by Item. Expenditure is then split between Activity categories on a proportional basis. As Council's forecasts have been developed by Item, we have undertaken our review on this basis. In the following paragraphs we discuss key items of water service operating expenditure.

Council has made a number of accounting adjustments to the operating expenditure which have resulted in negative expenditure in the 'Other' category, which is used as a reconciling item (**Section 2.2.1**). As this expenditure is not material, we have not reviewed this in detail.

Labour & Employee Provisions

Council is forecasting real increases in expenditure on labour and employee provisions over the coming Determination period. This is primarily driven by the impact of growth, salaries and wages, and the impact of capital schemes. The key assumptions that Council has used in developing its operating expenditure forecasts are discussed in the paragraphs below.

Growth Factors

Council has assumed annual projected property growth of 1.6-1.8% over the coming Determination period. The projected property lot growth and population growth factor has been derived from data sourced from the Central Coast Regional Profile, which was prepared by an external demographer engaged by Council to provide detailed demographic projections based on Census data. Council has applied growth factors to the total annual water service operating expenditure (excluding the corporate overhead charge) to estimate the financial impact of the growth. It has forecast that its water service operating expenditure requirement will increase by approximately $222k/annum as a result of growth within the area. It has split this expenditure equally between its labour and materials expenditure projections.

While we are not in a position to comment on the projected growth, we do not consider that the growth factor should be applied to the total operating expenditure as this is likely to over-estimate the financial impact of growth. Growth is unlikely to impact all elements of Council's operating expenditure budget. As Council's financial model does not separately identify base and variable operating expenditure, it is not possible to readily quantify the impact of Council's assumption. In the absence of this detail, we recommend that the growth factor be applied to the operating expenditure arising from labour and materials as expenditure on these items is most likely to have a direct link with property growth. **Table 8** provides a breakdown of our analysis.

Table 8 Impact of Growth on Water Service Operating Expenditure ($000, 2008/09 real)

	2008/09	2009/10	2010/11	2011/12	2012/13
Proposed by Council					
Increase in total operating expenditure due to growth	224	222	223	236	241
Increase in labour operating expenditure due to growth	112	111	111	118	121
Increase as % of labour operating expenditure	3.6%	3.3%	3.3%	3.4%	3.3%
Increase in materials operating expenditure due to growth	112	111	111	118	121
Increase as % of materials operating expenditure	5.2%	4.8%	5.0%	5.2%	5.1%
Halcrow Recommendation					
Increase in operating expenditure due to growth	92	95	92	93	94
Increase in labour operating expenditure due to growth	46	47	46	46	47
Increase as % of labour operating expenditure	1.5%	1.5%	1.4%	1.4%	1.4%
Increase in materials operating expenditure due to growth	46	47	46	46	47
Increase as % of materials operating expenditure	2.1%	2.0%	2.1%	2.0%	2.0%

Council has indicated that it will adjust future Water Models to apply growth factors to labour and materials only.

In addition to the above, it would appear that the property data reported by Council in the AIR does not correspond to the data within its financial model. While we don't consider the differences to be material, the annual growth factors in the AIR appear slightly lower (1.5-1.7%). Council indicated that its projected future Water Revenue calculations were based on the data available at the time. The most recent property data was received and input into the AIR after calculations from the final model had been completed. Due to tight time constraints it was not considered viable to also update the Model and all

subsequent calculations and change all information already input into the AIR. Council has indicated that its Model has now been updated and all long term projections use the updated property data.

Salary and Wages Increases

While Council is not proposing any changes in Full Time Equivalent staff, it is proposing above CPI increases in salary and wages expenditure of 0.7%-0.9% per annum. This has been applied to annual budgets for labour and employee provisions. The average annual impact on labour operating expenditure is $27k, and $12k on employee provisions. These adjustments appear reasonable given current labour market pressures.

Impact of Capital Schemes

Council's forecasts of operating expenditure have been adjusted to include the additional expenditure required to operate newly commissioned capital schemes. The additional expenditure associated with these schemes has been split between labour, materials and energy. Some of the key schemes are discussed in the paragraphs below.

JWS Groundwater Scheme – This JWS scheme has reviewed in detail in **Section 3.4.2**. This is a Gosford led scheme, with Wyong contributing 50% of the capital and operating costs.

The operating costs for this scheme have been developed by Gosford on the basis that the bores will yield 8.95ML/d. In 2008/09, the operating costs for the scheme are budgeted at $869k, which equates to approximately $0.27/kL (excluding treatment). This is forecast to increase to approximately $0.36/kL over the Determination period. Approximately 37% of this expenditure is for sampling and testing of the production and monitoring boreholes as required by the department of Water and Energy (DWE) under water extraction licences. The remaining expenditure is for operations (labour, materials and power) and maintenance.

Gosford City Council indicated that the estimated annual yield was based upon the following key assumptions:

- There is still significant uncertainty regarding future weather and climate conditions on the Central Coast and it cannot be assumed that recent rainfall will continue over the next Determination period.
- The operational strategy (yet to be finalised) for the Mardi to Mangrove transfer system aims to capture and store as much water as possible into

Mangrove Creek Dam. Hence, the strategy prioritises operation of the groundwater scheme to supply customers and enable maximum streamflows from the Wyong River to be transferred to Mangrove Creek Dam.

While we accept that there is uncertainty over future weather and climate conditions we expect that, due to high expense of operating this scheme, use of the boreholes will reduce once the Mardi to Mangrove link becomes operational and a cheaper source of water becomes available. Once storage levels in the Mangrove Creek system recover sufficiently we would expect a significant reduction in the operating expenditure for this scheme. However, we recognise that the water treatment plants for the groundwater sources will have to be operated regularly to ensure that they are available for use in times of need.

In addition to the above, Gosford and Wyong have made different allowances within their respective AIR/SIRs for the operating expenditure of the JWS Groundwater scheme. The figures reported by Wyong include inflation. From discussions with Gosford City Council, which prepared the cost estimates for the scheme, the figures it has reported are correct. This is highlighted in **Table 9**.

Table 9 JWS Groundwater Scheme – Operating Expenditure ($000, 2008/09 real)

	2008/09	2009/10	2010/11	2011/12	2012/13
JWS Operating Expenditure	869	1,176	1,122	1,067	997
Allowance by Wyong	434	606	595	583	561
Allowance by Gosford	434	588	561	533	498
Difference	-	18	34	50	63

Mardi to Mangrove Transfer - The Mardi to Mangrove scheme has been reviewed in detail in **Section 3.4.2**. Completion of the scheme is forecast for 2010/11, from which time additional expenditure will be required to operate the scheme. Council is proposing to transfer a higher volume of water in the first few years of operation of the scheme in order to replenish dam storages. This is reflected in **Table 10**.

Table 10 Mardi to Mangrove Transfer – Operating Expenditure ($000, 2008/09 real)

	2009/10	2010/11	2011/12	2012/13
Volume transferred (ML/yr)*	-	12,512	10,081	7,491
JWS Operating Expenditure	-	500	400	300
Wyong Share - at 50%	-	250	200	150

Note (*) From the JWS Water Supply System Model. Transfers represent weighted average forecast transfers.

JWS Warnervale Stormwater Harvesting Scheme - The Warnervale Stormwater Harvesting scheme is jointly funded by the JWS. The operating expenditure is primarily materials. Gosford and Wyong Councils have made different assumptions in relation to the timing of the operating expenditure associated with the scheme. The operating expenditure forecasts for Gosford and Wyong are shown in **Table 11**.

Table 11 JWS Warnervale Stormwater Harvesting Scheme Operating Expenditure ($000, 2008/09 real)

	2009/10	2010/11	2011/12	2012/13
Gosford contribution	-	-	-	50
Wyong contribution	-	50	50	50
Difference	-	50	50	-

Note (*) – this is a recycled water scheme

The scheme is currently planned to start in 2012/13, and hence Wyong's contribution requires adjustment. In addition, IPART has requested that recycled water operating expenditure be reported separately from water service operating expenditure. Hence, we recommend this be removed from the water service operating expenditure allowance.

Efficiency Savings

Council has applied efficiency savings of 1% per annum to the annual labour expenditure budget. It has assumed that the savings will be achieved within the labour and materials budgets. This is equivalent to savings of approximately $34k/annum for labour and approximately $17k/annum for materials. Based on discussions with Council, these savings are yet to be identified. Efficiency savings are discussed in greater detail in **Section 2.7**.

Average cost of labour

Council has forecast that the combined impact of the above drivers will increase its expenditure on labour and employee provisions over the coming Determination period. An analysis of the average costs of employment per FTE is shown in **Table 12**.

Table 12 Average cost per FTE in the Water Service ($000, 2008/09 real)

	2008/09	2009/10	2010/11	2011/12	2012/13
Labour (excl employee provisions)	3,241	3,417	3,468	3,598	3,754
Employee provisions	1,533	1,617	1,640	1,702	1,775
Total	4,775	5,033	5,109	5,300	5,529
FTE	78	78	78	78	78
Labour/FTE	61.2	64.5	65.5	68.0	70.9
	1%	5%	1%	4%	4%

As seen in **Table 12**, Council is proposing that the average cost per FTE will increase from $61.2k in 2008/09 to $70.9k in 2012/13, which is an increase of approximately 16% in real terms. This is a significant increase which represents an increasing cost of attracting labour resource and may also indicate that Council is proposing to change the current mix of staff within the water service. In any case, the average cost per FTE does not appear excessive. However, as some of Council's expenditure on labour has been reported within its corporate overhead charge (refer Section 2.2.2), its reported expenditure on labour (within the AIR) is likely to be understated. Including the labour element of expenditure arising from the 'JWS admin' and 'water service admin' may indicate a higher average cost per FTE. Council has agreed that in future, Admin and JWS Admin expenditures will be included in operational expense rather than corporate overhead. This will ensure all labour costs within the water service are readily identifiable.

Materials

Council is forecasting real increases in materials expenditure over the coming Determination period. As with expenditure on labour, this is primarily driven by the impact of growth and capital schemes. In addition to these drivers, Council is

also proposing increases in expenditure due to increased maintenance and increased costs to meet mandatory standards.

Maintenance of ageing assets

Council has assumed an annual increase in total operating expenditure associated with the maintenance of ageing assets of 0.2%. Council was unable to identify the source of this figure other than to say that it goes back to at least the Council submission of October 2004. The assumption increases the annual water service operating expenditure by approximately $28k/annum. This has been split between labour, materials, and hired and contract services on the basis of 25%:50%:25%.

As with Council's assumptions in relation to growth, we do not consider that ageing assets will impact all operating expenditure items. However, it is reasonable to make allowances for increased maintenance expenditure associated with ageing assets, and the assumption adopted by Council, in terms of the total impact on operating expenditure, appears modest.

Increased costs to meet mandatory standards

Council has assumed an annual increase in total operating expenditure associated with the changing mandatory standards of 0.5%. Council has reported that additional expenditure is required to implement water sharing plans and ensure compliance with the OH&S Act 2000. The assumption increases the annual water service operating expenditure by approximately $68k/annum. We acknowledge that the water sharing plans are still to be finalised, however we consider that increases as a result of the OH&S Act 2000 would already be included within base expenditure. Council has indicated that it has taken the approach it has due to the difficulty in allocating costs to specific changes in standards. However, we consider that Council should be in a position to quantify the impact of meeting these mandatory standards. On the basis that Council has not substantiated the increase, we recommend that it be excluded from Council's operating expenditure.

Bulk Water Purchases

Council has proposed significant increase in the purchase of bulk water from Hunter Water over that actually purchased in 2007/08, and that currently forecast for 2009/10. **Table 13** shows the allowance made by Wyong Council in its operating expenditure forecast.

Table 13 Bulk Water Purchases from Hunter Water ($000, 2008/09 real)

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/ 11	2011/ 12	2012/ 13
Wyong Contribution* ($000)	983	1,663	202	524	988	1,835	1,825	1,231
Volume purchased (ML)*	7094	8404	771	1165	1865	3136	2875	1838
Unit rate ($/kL)	0.28	0.40	0.52	0.90	1.06	1.17	1.27	1.34

Note (*) – The total volume represents that purchased by the JWS; Council has forecast unit rates based on discussions with HWC.

As is evident from **Table 13**, Council is expecting significant increases in the unit rate of water charged by Hunter Water. As these rates are currently subject to a separate review, we have no comments to make in relation to the rates assumed by Council.

Council is also proposing a significant increase in the volume of water purchased over current levels. This is despite the fact that ongoing improvements in the surface water availability on the Central Coast have resulted in some small JWS dams overflowing throughout 2008/09. Council has indicated that although some of its small storages are overflowing, current total storage levels have still only recovered to 30% of capacity. Increased levels of Hunter transfers over the next pricing period are forecast to assist Council in further storage recovery.

Council has forecast the projections of volume of water purchased using a stochastic model. The model takes into account the impact of system upgrades and calculates system storage levels and assumed water sales for various scenarios. Although we have not reviewed the model, we understand that the results are sensitive to the completion dates of the Mardi-Mangrove pipeline and system operating rules.

In addition to the above, we note that the allowance made by Gosford City Council in its submission to IPART is significantly lower than that of Wyong. This is despite the fact that the any purchase from Hunter Water would be made by the GWCWA, with each Council contributing approximately 50% of the purchase price.

Council has acknowledged the significant difference between the assumptions it has used and those used by Gosford. Gosford has indicated that while it also accepts the modelling approach adopted by Wyong as reasonable, it has consciously reduced the forecasts arising out of stochastic modelling in order to mitigate prices and as such accepts that this course of action may bring risks.

We understand that IPART has commissioned a separate review of consumption which will further clarify Council's supply/demand balance over the coming Determination period. Any assessment of expenditure on bulk water purchases should be deferred until the review has been completed.

We note that Wyong has offset its operating expenditure projections to account for avoided treatment costs resulting from the bulk purchase of treated water. It has assumed savings of approximately 5.7c/kL, which is in line with Council's unit cost of treatment.

Rebates & Water Savings Fund

Expenditure on Demand Management Initiatives

Throughout the current (2006) Determination period, Council has spent significantly on extraordinary demand management initiatives. These initiatives included rebates for washing machines and rainwater tanks, residential and non-residential retrofits, and the Watertight Program. Of these, the key items of expenditure were washing machine rebates and rainwater tank rebates (refer to **Section 2.3.2**). While Council is not proposing to continue the majority of these initiatives, it has made an allowance of $309k for its water tank rebate program, and $103k for its washing machine rebate program. These programs will be terminated after 2009/10.

Payments to customers under the water tank rebate program will be in addition to the rebates available to customers under the State Government's water tank rebate program. The NSW Government Rainwater Tank Rebate Program was introduced in July 2007 and provides rebates of up to $1,500 per installation. The rebate paid by Council varies depending on the size of the water tank installed with a maximum rebate of $1,000. We understand that the JWS Board will shortly (19 November 2008) be recommending to Council that this program be modified so that rebates are only granted to tanks that are connected internally. Assuming that this modification to the program is endorsed by Council, it has assumed that the financial impact of the modification to the rebate program will be neutral as the additional amount payable to internally connected tanks is estimated to be similar to the savings for no longer paying for tanks that are not connected internally. There is debate as to the cost-effectiveness of the water rebate program. Council's own analysis found that the cost per kL of a 5,000L internally connected water tank ranged from $3.08/kL to $3.70/kL, which compares to the current price for water of $1.67/kL (for 2008/09). On the basis of Council's analysis, the efficiency of this expenditure is questionable particularly given that restrictions on outdoor

watering remain in place and are likely to do so for part of the coming Determination period.

Given that the NSW Government Rainwater Tank Rebate Program continues to operate, we recommend that expenditure on rainwater tank rebates be excluded from Council's operating expenditure requirement.

As for the water rebate program, there is debate as to the cost-effectiveness of Council's washing machine rebate program. Council's own analysis found that the cost per kL of a washing machine rebates ranged from $2.00/kL to $9.44/kL (2006/07 real, based on $150 rebate and varying washing machine star ratings). This compares to the current price for water of $1.67/kL (for 2008/09). Given that Council's storage levels have improved significantly since it introduced the rebate program, the current economic justification to continue this rebate program remains doubtful. We understand that as of 1 October 2008, Council discontinued the program. On this basis we recommend we recommend that expenditure on the washing machine rebate scheme be excluded from Council's operating expenditure requirement.

Water Savings Fund

Council has assumed an annual contribution to the Water Savings Fund of $950k/annum. We understand that the contribution is yet to be agreed with Department of Water and Energy (DWE). Once finalised, we recommend that Council's operating expenditure requirement be adjusted to reflect the agreed contribution. Council has indicated that if this figure changes, it will make necessary adjustments to its financial model.

External Consultants and Hired & Contract Services

Council is proposing slight reductions in expenditure on External Consultants and Hired & Contract Services over current levels. Given that Council reported extraordinary levels of expenditure ($1.159M) on consultants in 2006/07 in development of its Water Plan 2050 and Asset Management Planning, we queried whether there would be a greater overall reduction in expenditure on consultants over the coming period than forecast by Council. We understand that Council out-sources very few of its operational activities. Some areas where it does outsource include specialist maintenance activities such as CCTV inspections and leakage detection (the network is inspected once every three years). Council has indicated that in addition to the above, it uses external consultants/contractors for a range of operational (non-capital) activities such as Strategic Business Plans, IWCM Studies, Water Management Plans, Water Use Audits, OHS Plans, Risk

Planning, Auditing of Council activities. In addition, external resources are brought in to supplement internal resources or to provide specialist services.

Recommended Expenditure

Council is not proposing significant increases in expenditure (in real terms) from its 2008/09 budgeted spend. However, our analysis indicates that Council's proposed expenditure is significantly higher than that approved by IPART in the last Determination. Increases in expenditure over the period were primarily due to securing Council's water supply during the extended drought. Also, additional expenditure has resulted from the operation of new capital schemes. While Council has identified and quantified much of the extraordinary drought related expenditure over the period 2006/07 to 2008/09, its current water operating expenditure remains significantly greater than that funded by IPART at the last Determination. This highlights a disconnect between the operations and expenditure deemed justified and efficient by IPART, and Council's actual operations and budgets. This has reduced our ability to gain assurance that Council's historical levels of expenditure, particularly throughout the past few years, have been prudent and efficient.

In general, we consider the key assumptions used by Council in relation to forecast changes in operating expenditure reasonable. However, Council's method of projecting operating expenditure, whereby it rolls forward the total base operating expenditure from the previous year and makes adjustments for known changes means that inefficiencies in the base year are likely to be rolled forward. This raises questions as to the efficiency of Council's operating expenditure projections. In **Section 2.7**, we discuss efficiency in more detail, particularly in relation to whether there may be scope for Council to increase the efficiency of its operations.

On the basis of our analysis of Council's water service operating expenditure, we recommend the expenditure shown in **Table 14** for the water service. These recommendations exclude the impact of efficiencies which are discussed in more detail in **Section 2.7**

Table 14 Recommended Water Service Operating Expenditure ($000, 2008/09 real)

	2009/10	2010/11	2011/12	2012/13
Water Opex in Submission (Table 3.5 AIR excluding corporate overhead)	13,499	14,581	15,132	14,666
Add				
Administrative costs to be directly allocated to Water Service	2,561	2,637	2,713	2,791
JWS Admin to be directly allocated to Water Service	1,106	1,124	1,144	1,163
Less				
Water tank rebate scheme	309			
Washing machine rebate scheme	103			
Adjustment to the growth factor applied to operating expenditure	127	131	143	147
JWS Groundwater Scheme – adjustment to remove inflation	18	34	50	63
Allowance for increase due to Mandatory Standards not substantiated	64	65	71	73
Recycled water operating expenditure*	366	416	416	416
Recommended water services operating expenditure	16,178	17,697	18,309	17,921

Note (*): Council has reported recycled water opex within the water service opex. This expenditure has been deducted as IPART requires it to be reported separately.

2.4 Recycled Water

2.4.1 *Historical Expenditure*

The previous Determination did not include any specific allowance for recycled water schemes.

2.4.2 *Proposed Expenditure*

Council is increasingly reusing treated effluent and harvested stormwater for non-potable use. It currently re-uses approximately 10% of sewage effluent on golf courses, municipal watering and construction activities. Council has an effluent re-use schemes a Bateau Bay, Toukley, Wyong South, Charmhaven, Mannering Park and Gwandalan STPs, with Toukley being the largest.

Council is proposing to increase expenditure on its recycled water schemes over the coming Determination period. The increase in expenditure is due to a forecast increase in the output and usage of the schemes from 1,200ML/annum in 2008/09 to 1,700ML/annum. A review of one of Council's recycled water schemes (the Toukley Water Reuse scheme) is included in **Section 2.4**.

Our review of recycled water operating expenditure has been limited to determining whether Wyong has made allowances for recycled water within its submission.

Council's AIR/SIR has not separated out the expenditure associated with its recycled water operations from its water service expenditure. However, Council has provided us with its current best estimates of the operating expenditure associated with its recycled water schemes. We have adjusted Council's proposed water service operating expenditure to exclude that recycled water operating expenditure which it has separately identified (**Section 2.3.3** refers).

2.5 Wastewater

2.5.1 General

Council provides sewerage services to approximately 60,000 properties. Council's sewerage service includes operation and maintenance activities associated with sewage collection, treatment and disposal of effluent and sludge.

The majority of Council's sewage system is relatively new. It has a reticulation system of over 1,200km of mains and 142 pumping stations. It has treatment plants at Bateau Bay, Toukley, Wyong South, Charmhaven, Mannering Park and Gwandlan. Effluent is discharged to the ocean at Bateau Bay and Norah Head. Sewage sludge is composted and reused.

Most operations and maintenance activities are undertaken in house, although Council does contract out non-core and specialist activities. Key factors affecting Council's operations in recent years have included:

- The drought - Council's planned maintenance program was delayed in 2006/07 as staff had to be diverted to water operations activities.
- Staff shortages – Council reported that it currently has a number of open positions within operations that it has been unable to fill. It has an ageing operations workforce and is expecting skills shortages to become a major challenge in the years ahead. In order to manage peaks in workload, Council hires short term and temporary staff.

2.5.2 Historical Expenditure

Council, in its Submission to IPART, has reported that its operating expenditure for the wastewater service exceeded IPART's Determination. However, the figures reported by Council in Appendix B of its Submission are inconsistent with the figures reported in the AIR. Our analysis of Wyong's AIR indicates that the operating expenditure reported by Council is actually below the levels set by IPART in the 2006 Determination.

Council has indicated that in undertaking the analysis of historical expenditure compared to IPART allowed expenditure, it used the expenditure from Council's 2006 submission rather than the final IPART determined expenditure.

We have based our analysis of the figures reported in the AIR.

Figure 6 shows Council's historical and proposed expenditure on the wastewater service, as well as the expenditure set in the last Determination.

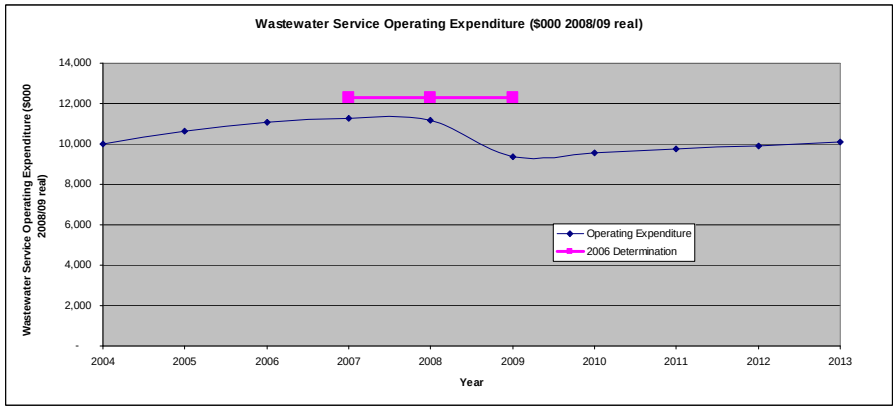

Figure 6 Wastewater Service Operating Expenditure ($000, 2008/09 real)

The variance between the actual expenditure and the recommended expenditure over the period from 2006/2007 to 2008/2009 is $5.1M, which represents a decrease of 14%. **Table 15** shows the variation in Council's actual operating expenditure as reported in the AIR to that proposed in the 2006 Determination.

Table 15 Wastewater Service spend vs. Determination ($000, 2008/09 real)

	2006/07	2007/08	2008/09	Total
Determination	12,288	12,288	12,288	36,865
Actual (Table 3.5 AIR excluding corporate overhead)	11,262	11,188	9,351	31,801
Difference	- 1,027	- 1,100	-2,937	-5,064
Difference (%)	-8%	-9%	-24%	-14%

Taking into account the sewer administration charge that Council has reported under the corporate overhead charge, the wastewater service operating expenditure increases by approximately $5M (refer **Section 2.2.2**). This indicates that Council's wastewater expenditure has been approximately in line with the 2006 Determination.

When asked to explain the variation between actual and Determination expenditure, Council indicated that the variation is not attributable to any one identifiable item or factor. A review of Council's expenditure shows that increases in expenditure on labour and employee provisions since 2006/07 appear to be off-set by a reduction in expenditure on other items (Materials, Hired & Contract Services etc). Increases in expenditure on labour and employee provisions have primarily been the result of increases in staff numbers and increases in salary and wages above inflation. While reductions in other items of expenditure are likely to

be attributable, at least in part, to the deferring of some maintenance activities as a result of diverting resources to address the impacts of the drought.

Council has used 2007/08 actual wastewater service operating expenditure as the basis for projections of operating expenditure over the period 2009/10 to 2012/13. Although it appears that Council's historical wastewater operating expenditure has been approximately in line with the levels determined by IPART, its overall operating expenditure is well in excess of IPART's 2006 Determination. This raises questions as to the prudence and efficiency of its historical operating expenditure. Council's method of projecting operating expenditure, whereby it rolls forward the total base operating expenditure from the previous year and makes adjustments for known changes means that inefficiencies are likely to be rolled forward. This raises questions as to the prudence and efficiency of Council's operating expenditure projections. Council has indicated its intent to undertake a detailed review of its budgeting and forecasting methodology in the near future with a view to revising such methodology, to remove the possibility that inefficiencies are rolled forward. Council is also considering the implementation of the Dept of Commerce 'FinMod' model for long term forecasting, given that this model has been widely used for a number of years.

In **Section 2.7**, we discuss efficiency targets for the coming Determination period..

2.5.3 Proposed Expenditure

Council is proposing increases of approximately 2% per annum in wastewater service operating expenditure over the coming Determination period. As with the water service, Council has forecast its operating expenditure requirement using its 'Water Model'. The forecasts developed by Council are based on 2007/08 actual year end figures, adjusted to account for expected changes in Council's future operating environment.

The following graphs show Council's proposed expenditure by Item and by Activity. Council's financial model forecasts operating expenditure by Item. Expenditure is then split between Activity categories on a proportional basis.

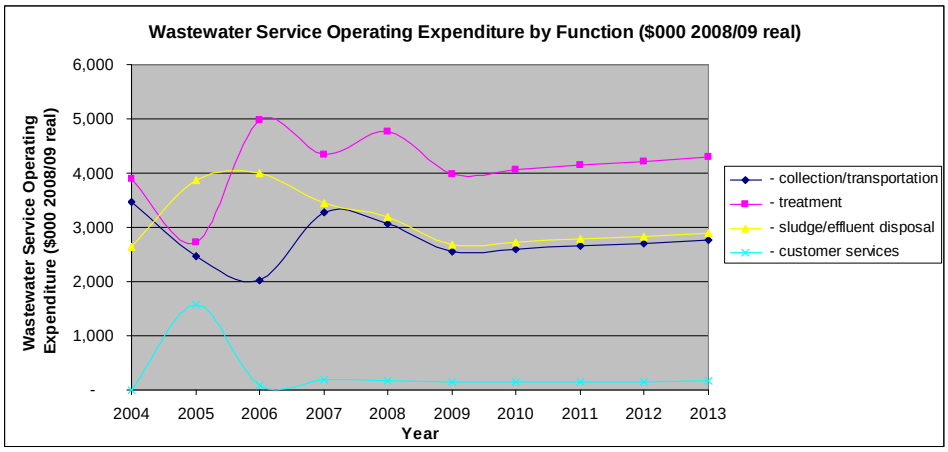

Figure 7 Wastewater Service Operating Expenditure by Function ($000, 2008/09 real)

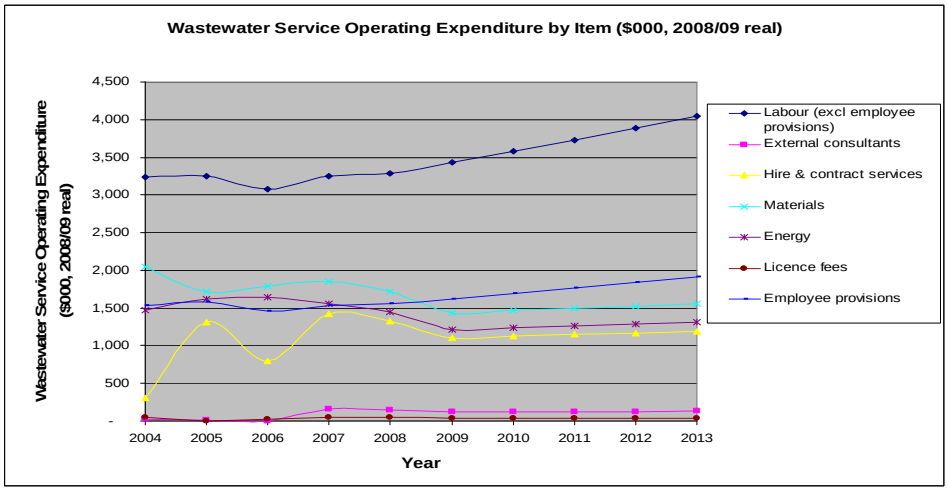

Figure 8 Wastewater Service Operating Expenditure by Item ($000, 2008/09 real)

Key items of expenditure are discussed in the following paragraphs.

Labour & Employee Provisions

Growth

As with the water service, Council has applied growth factors to the total annual wastewater service operating expenditure (excluding the corporate overhead charge). The resulting estimate of the financial impact of the growth is an average of $168k/annum. It has allocated the increase to labour (50%), and then split the remainder out over the other expenditure items on a proportional basis. We do not consider that the growth factor should be applied to the total operating

expenditure as this is likely to over-estimate the financial impact of growth. We recommend that the growth factor be applied only to the operating expenditure arising from labour and materials. **Table 16** shows the impact of this change on wastewater service operating expenditure.

Table 16 Impact of Growth on Wastewater Service Operating Expenditure ($000, 2008/09 real)

	2008/09	2009/10	2010/11	2011/12	2012/13
Proposed by Council	204	168	168	168	169
Halcrow Recommendation	92	94	95	97	98
Difference	(112)	(74)	(73)	(71)	(71)

Salary and Wages Increases

Council is not proposing any changes in Full Time Equivalent staff for the wastewater service. However, it is proposing above CPI increases in salary and wages expenditure. The average annual impact on labour operating expenditure is $43k. Employee provisions have been calculated at a fixed on-cost rate (of 47.30%), which is unchanged from current levels and appears reasonable.

Average cost of labour

Council has forecast that the combined impact of the above drivers will increase its expenditure on labour and employee provisions over the coming Determination period. An analysis of the average costs of employment per FTE is shown in **Table 17**.

Table 17 Average cost per FTE in the Wastewater Service ($000, 2008/09 real)

	2008/09	2009/10	2010/11	2011/12	2012/13
Labour (excl employee provisions)	3,428	3,577	3,730	3,883	4,040
Employee provisions	1,622	1,692	1,764	1,835	1,911
Total	5,050	5,268	5,494	5,718	5,952
FTE	93	93	93	93	93
Labour/FTE	54	57	59	61	64
	3%	0%	4.35%	4.33%	4.29%

As seen in **Table 17**, Council is proposing that the average cost per FTE will increase from $54k in 2008/09 to $64k in 2012/13, which is an increase of approximately 19% in real terms. This is a sizeable increase although we note that it is significantly lower than the average cost per FTE in the water service ($71k). In any case, the average cost per FTE does not appear excessive. However, as some of Council's expenditure on labour has been reported within its corporate overhead charge (refer **Section 2.2.2**), its reported expenditure on labour (within the AIR) is likely to be understated. Including the labour element of expenditure arising from the 'sewer service admin' may indicate a higher average cost per FTE. Council has agreed that for future reporting to IPART, Admin expenditures will be included in operational expense rather than corporate overhead. This will ensure all labour costs within the wastewater service are readily identifiable.

Other Key Assumptions

In addition to the above, Council has made assumptions in relation to the maintenance requirements of its ageing asset base, mandatory standards and efficiencies. The adjustments to expenditure resulting from these factors have been apportioned between the remaining item categories (i.e. External consultants, Hired & Contract Services, Materials, Energy, Licence Fees, and Other) on the basis that the splits of expenditure between each of the expenditure items will be as for 2007/08.

Maintenance of ageing assets

Council has assumed an annual increase in total operating expenditure associated with the maintenance of ageing wastewater assets of 0.3%. The assumption increases annual wastewater service operating expenditure by approximately $29k/annum which is equivalent to an annual increase in maintenance expenditure of approximately 0.6-0.7% (based on maintenance budgets reported in the 2008/09 Management Plan). It is reasonable to make allowances for increased maintenance expenditure associated with ageing assets, and the assumption adopted by Council appears modest.

Mandatory Standards

Council has assumed an annual increase in total operating expenditure associated with the changing mandatory standards of 0.5%. Council has reported that additional expenditure is required to ensure compliance with changing mandatory standards that have the potential to significantly impact operating costs. It has provided the OH&S Act 2000 as an example of such a standard. The assumption increases the annual wastewater service operating expenditure by approximately $47k/annum. We consider that increases in expenditure arising from the OH&S

Act 2000 would already be included within base expenditure. Council has indicated that it has taken the approach it has due to the difficulty in allocating costs to specific changes in standards. However, we consider that Council should be in a position to quantify the impact of meeting these mandatory standards. On the basis that Council has not substantiated the increase, we recommend that it be excluded from Council's operating expenditure.

Efficiency Savings

Council has assumed efficiency savings of 1% per annum of the total wastewater services operating expenditure. We note that this is different to the assumption it has made in relation to the water service, where the annual efficiency target was applied to labour expenditure. The expected efficiency savings are approximately $96k/annum. Based on discussions with Council, these savings are yet to be identified. Efficiency savings are discussed in greater detail in **Section 2.7**.

Recommended Expenditure

Council is proposing increases in wastewater operating expenditure of approximately 2% (in real terms) from its 2008/09 budgeted spend. As noted previously, we have concerns as to the prudence and efficiency of Council's overall operating expenditure projections. In **Section 2.7**, we have discussed some areas where we consider that there may be scope for Council to increase the efficiency of its operations over the coming Determination period.

On the basis of our analysis of Council's wastewater service operating expenditure, we recommend the expenditure shown in **Table 18** for the wastewater service. These recommendations exclude the impact of efficiencies which are discussed in more detail in **Section 2.7**

Table 18 Recommended Wastewater Service Operating Expenditure ($000, 2008/09 real)

	2009/10	2010/11	2011/12	2012/13
Wastewater Opex in Submission (Table 3.5 AIR excluding corporate overhead)	9,542	9,737	9,922	10,111
Add				
Administrative costs to be directly allocated to Wastewater Service	2,262	2,337	2,410	2,485
Less				
Adjustment to growth	112	74	73	71
Allowance for increase due to Mandatory Standards not substantiated	45	46	47	48
Recommended Wastewater Service opex	11,646	11,954	12,211	12,477

2.6 Stormwater

2.6.1 Historical Expenditure

Council's stormwater service is managed within the roads and drainage business unit. Key operational activities include maintenance, clearing and CCTV inspections. All core activities are undertaken in house, while specialist activities (such as CCTV surveys and pipe cleaning) are contracted out. Operating expenditure does not vary significantly from year to year, and the biggest component of spend is labour. Council uses separate general ledger accounts to record expenditure on stormwater services. In this way, the expenditure is ring-fenced from roads operations.

The 2006 Determination did not separately identify the expenditure funded for Council's stormwater service. However, Council has separately reported the expenditure in its AIR, and this is shown in **Table 19**.

Table 19 Stormwater Service spend vs. Determination ($000, 2008/09 real)

	2006/07	2007/08	2008/09	Total
Determination (Table 3.5 AIR excluding corporate overhead)	0	0	0	0
Actual	464	976	1,201	2,641

Figure 9 shows the historical and proposed stormwater service operating expenditure.

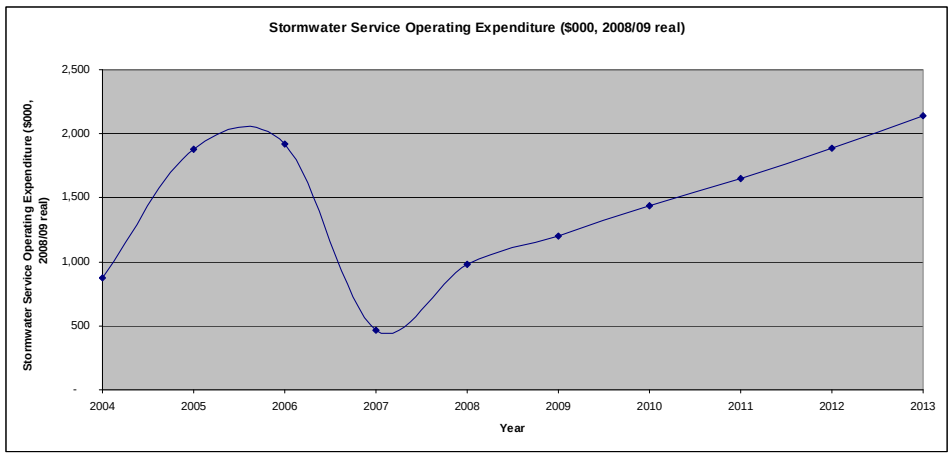

Figure 9 Stormwater Service Operating Expenditure ($000, 2008/09 real)

We queried with Council the unusual profile of its historical expenditure, given that it indicated that expenditure on stormwater operations does not vary significantly from year to year. Council indicated that during 2005/06 a one-off payment of $721k was made which has inflated figures for that year. The payment was made to a developer for works provided over and above those required as developer contributions. Council indicated that the comparison between years is further complicated by the change in accounting policy whereby corporate overheads are no longer allocated to capital projects.

Council has used 2007/08 as the basis for projections of stormwater operating expenditure. Given the significant apparent fluctuations in historical expenditure, we are unable to confirm whether 2007/08 is a suitable year upon which to base projections of expenditure. However, as the operating expenditure in 2007/08 is approximately in line with the expenditure in 2003/04 and 2005/06 (after the impact of the one-off payment is deducted), it is unlikely to result in an overstatement of Council's expenditure requirements.

2.6.2 *Proposed Expenditure*

Council is proposing increases of approximately 15% per annum (real) in stormwater service operating expenditure over the coming Determination period (excluding Corporate Overhead charges). As with the water and wastewater services, Council has forecast its operating expenditure requirement using its 'Water Model'. The forecasts developed by Council are based on 2007/08 actual year end figures, adjusted to account for expected changes in Council's future operating environment.

Figure 10 and **Figure 11** show Council's proposed expenditure by Item and by Activity. Council's financial model forecasts operating expenditure by Item. Expenditure is then split between Function categories on a proportional basis.

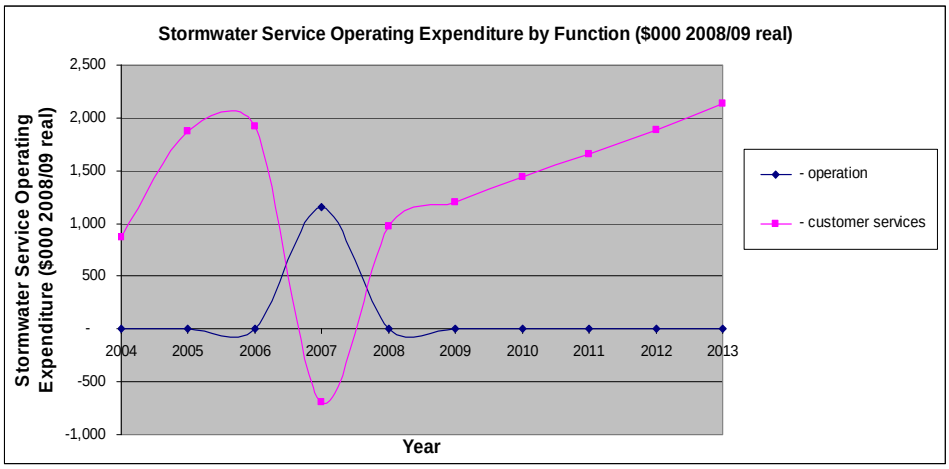

Figure 10 Stormwater Service Operating Expenditure by Function ($000, 2008/09 real)

As noted in **Section 2.6.1**, Council has been unable to provide an explanation of the unusual historical profile of stormwater operating expenditure within the time constraints of this review. Hence, we are uncertain as to why it has reported a negative figure for customer services expenditure in 2006/07.

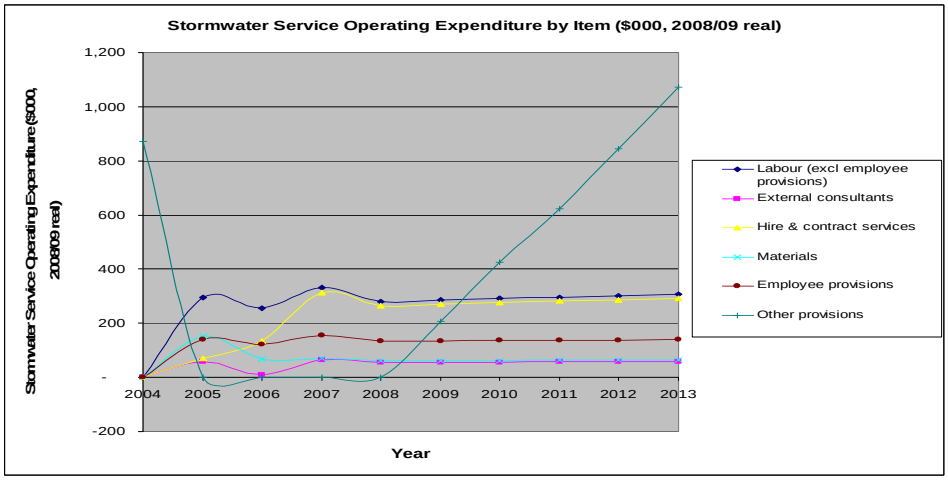

Figure 11 Stormwater Service Operating Expenditure by Item ($000, 2008/09 real)

As shown in **Figure 11**, the increase in 'Other provisions' is driving the increase in stormwater expenditure over the coming Determination period. The proposed increase in expenditure on other Items (labour, materials etc) is modest (~2% per annum). Based on a review of Council's financial model it appears that this expenditure is actually part of the allocation of Corporate operating expenditure, and hence should not be reported under 'Other provisions'.

Based on a review of Council's model, the operational element of the proposed expenditure (i.e. excluding 'Other provisions') has been calculated by taking the actual operating expenditure from 2007/08 and adjusting it for expected changes in the operating environment to give an annual operating expenditure budget for each year 2008/9 to 2012/13. This has then been apportioned between labour, external consultants, hired & contract services, and materials based on 2007/08 actual spend. Employee provisions have been calculated at a fixed on-cost rate (of 47.30%), which is unchanged from current levels and appears reasonable.

The key drivers of change to the annual operating expenditure are:

- growth in properties (approximately $16k/annum);
- increases in salary and wages over inflation (approximately $4k/annum);
- increases in maintenance due to ageing assets (approximately $3k/annum);
- increases due to mandatory standards (approximately $5k/annum); and
- assumptions about efficiency (approximately $10k savings/annum).

Council indicated that its operating expenditure requirements are gradually increasing over time due to increasing maintenance expenditure associated with Water Sensitive Urban Design (WSUD) stormwater schemes and the increasing costs of waste disposal. WSUD schemes are more labour intensive than traditional stormwater schemes, which in turn increase expenditure on labour, hired & contract services, and external consultants. In light of these factors, the increases in the operational element of operating expenditure proposed by Council appear reasonable and justified.

Efficiency Savings

Council has assumed efficiency savings of 1% per annum of the total stormwater services operating expenditure (excluding the corporate overhead charge). We note that this is different to the assumption it has made in relation to the water service, where the annual efficiency target was applied to labour expenditure. The expected efficiency savings are approximately $10k/annum. Based on discussions with Council, these savings are yet to be identified. Efficiency savings are discussed in greater detail in **Section 2.7**.

Recommended Expenditure

On the basis of our analysis we are generally satisfied with the method by which Council has forecast the operations element of stormwater operating expenditure. However, we note that based on a review of Council's financial model it appears that this expenditure is actually part of the allocation of Corporate operating expenditure, and hence should not be reported under 'Other provisions'.

We note that Council has been unable to provide clarification of the movement in historical expenditure within the time constraints of this review. This has reduced our ability to gain assurance over the expenditure proposed by Council. However, we are of the opinion that the operations element of proposed expenditure is appropriate. On this basis we do not propose any changes Council's proposed stormwater operating expenditure, although we do recommend that 'Other provisions' be reclassified as 'Allocated proportion of Corporate opex'. Our recommended operating expenditure for the stormwater service is shown in **Table 20**.

Table 20 Recommended Stormwater Service Operating Expenditure ($000, 2008/09 real)

	2009/10	2010/11	2011/12	2012/13
Stormwater Opex in Submission (Table 3.5 AIR excluding corporate overhead)	1,441	1,652	1,890	2,137
Less				
Other Provisions allocated incorrectly (Table 3.6 AIR)*	426	622	844	1,073
Recommended Stormwater Service opex	**1,016**	**1,030**	**1,045**	**1,064**

Note (*) – we recommend that this expenditure be allocated to Corporate opex

2.7 Benchmarking and Efficiency

2.7.1 *Benchmarking*

The National Performance Report for 2006/07 ranks Council against other urban water authorities of comparable size for a number of performance indicators. Out of nine urban water authorities reported on, Council was ranked equal 2nd (lowest) in 2005/06 and 6th in 2006/07 in terms of real operating cost per property for water and sewerage operating cost. Although only limited conclusions may be drawn from such benchmarking studies, the results indicate that there may be an opportunity for Council to increase productivity over the current levels. **Table 21** provides the results of this analysis.

Table 21 Real combined water & sewerage operating cost ($/property)

	2005/06	2006/07
Gosford	571	570
Logan Water	537	571
Cairns Water	560	503
Coliban Water	509	502
Maroochy Water	-	688
Gippsland Water	747	820
Wyong	**518**	**597**
Central Highlands Water	518	390
Goulburn Valley	584	612

Source: National Performance Report 2006-2007 Urban Water Utilities - WSAA

2.7.2 *Efficiency*

In its Submission to IPART, Council has indicated that allowance for future efficiency gains have been included in its forecast operating expenditures, however, the quantum of the efficiency gains has not been quantified. During the interviews, Council indicated that it has targeted a 1% per annum labour efficiency gain across the water wastewater and drainage functions over the price path period.

Council further indicated that the Wyong Shire is experiencing growth at a rate of approximately 2.5% per annum (the Submission to IPART indicates that growth of approximately 2% is expected over the price path period to 2013). It indicated that this growth is being accommodated partly through outsourcing of operation and maintenance services and partly through labour efficiency gains. It is

understood that staffing levels have remained constant over the last 20 years, in spite of the growth that has occurred.

Council noted that salaries are increasing at rates greater than CPI, which results in an effective efficiency gain provided operating expenditure remains constant in real terms. In its Submission to IPART, Council indicates that:

- salary and wage rate increases comprise Award increases plus a component for performance based and other increases;
- historically, Award increases have been in the order of 1% to 1.5% in excess of CPI; and
- performance based increases and increases resulting from labour market pressures have added a further 0.5% to 1% to salary and wage rates.

As noted in **Sections 2.3.3** and **2.5.3** figures derived from Council's "Water Model" reveal that the application of efficiency allowances has not been consistent. For water, the efficiency has been applied to labour only, whilst for wastewater and stormwater, the efficiency has been applied to the total operating expenditure (excluding the corporate overhead charge). In each case the efficiency allowance is 1%.

We consider that an efficiency allowance of 1% is reasonable, however, consider that some increase over the price path period would also be appropriate. Furthermore, we consider it appropriate to apply the efficiency to the total operating expenditure for all services, not only wastewater and stormwater.

Council's proposed and Halcrow's recommended efficiency targets are shown in **Table 22**.

Table 22 Proposed and Recommended Efficiency Savings

	2009/10	2010/11	2011/12	2012/13
Council Proposed	1.0%	1.0%	1.0%	1.0%
Halcrow Recommended	1.0%	1.0%	1.25%	1.25%

Note: Council figures indicate different application of efficiency across services. Halcrow recommend consistent application across all operating expenditure.

2.8 *Recommended Operating Expenditure Projections*

Council's proposed and Halcrow's recommended operating expenditure for the price path period 2009/10 to 2012/2013 is summarised in **Table 23**.

Table 23 Proposed and Recommended Operating Expenditure ($000 2008/09)

	2009/10	2010/11	2011/12	2012/13	Total
Council Submission (Table 3.5 AIR)					
Corporate Overheads[1]	18,772	17,771	17,506	17,229	71,277
Water	13,499	14,581	15,132	14,666	57,878
Wastewater	9,542	9,737	9,922	10,111	39,312
Stormwater	1,441	1,652	1,890	2,137	7,120
Total Proposed Opex (post-efficiency)	43,254	43,741	44,450	44,143	175,587
Halcrow Recommended					
Corporate Overheads[2]	9,698	9,778	9,847	9,917	39,240
Water	16,178	17,697	18,309	17,921	70,105
Wastewater	11,646	11,954	12,211	12,477	48,288
Stormwater	1,016	1,030	1,045	1,064	4,155
Total Recommended Opex (post-efficiency)	***38,539***	***40,458***	***41,412***	***41,378***	***161,787***
Add back efficiency already applied by Council					
Water	48	49	51	52	200
Wastewater	112	94	96	97	399
Stormwater	9	10	10	10	40
Halcrow Recommended					
Corporate Overheads[2]	9,698	9,778	9,847	9,917	39,240
Water + add back efficiency already applied	16,226	17,746	18,360	17,973	70,305
Wastewater + add back efficiency already applied	11,759	12,047	12,307	12,573	48,687
Stormwater + add back efficiency already applied	1,025	1,040	1,056	1,074	4,195
Total Recommended Opex (pre- efficiency)	***38,708***	***40,611***	***41,570***	***41,537***	***162,426***
Efficiency Target	1%	1%	1.25%	1.25%	0
Efficiency Allowance[3]	(387)	(406)	(520)	(519)	(1,832)

	2009/10	2010/11	2011/12	2012/13	Total
Recommended Efficiency					0
Corporate Overheads	(97)	(98)	(123)	(124)	(442)
Water	(162)	(177)	(229)	(225)	(794)
Wastewater	(118)	(120)	(154)	(157)	(549)
Stormwater	(10)	(10)	(13)	(13)	(47)
Recommended Opex (post-efficiency)					
Corporate Overheads	9,601	9,680	9,724	9,793	38,798
Water	16,064	17,568	18,130	17,748	69,511
Wastewater	11,641	11,927	12,154	12,416	48,138
Stormwater	1,015	1,030	1,043	1,061	4,148
Total Recommended Opex (post-efficiency)	***38,321***	***40,205***	***41,050***	***41,018***	***160,594***

Note (1) The Corporate Overhead Charge for the water service has been adjusted (refer **Section 2.2.2**), and hence this figure does not tie to Table 3.5 of Council's AIR/AIR.
(2) Includes reallocation of corporate overhead from stormwater service 'Other Provisions'
(3) The efficiency target has been applied to the water, wastewater and stormwater services and to the corporate overhead charge.

3 Capital Expenditure

3.1 Asset Management Framework

The impact of the drought on Wyong Shire Council has challenged it to reassess how it manages its water and wastewater assets with respect to Asset Management systems and plans. Council has produced various documents to explain these systems, although addition work is required to develop them to the standard set by NAMS (Engineering Institute) or the IIMM (International Infrastructure Management Manual). We noted that the Asset Management Plan (AMP) for all infrastructure assets (including water, sewerage and drainage) is currently being finalised and is due for release in November 2008. It appears to be a generic template from IIMM that is progressively being populated and improved over time. It sets out the strategy and goals for Asset Management and is supported by various policies (e.g. Infrastructure Assets Management Policy) and plans.

Although much of the AMP is yet to be populated, it is expected that these improvements will be made in accordance with the business goal to develop a core Asset Management Capability and then move towards an advance level of Asset Management. We have seen evidence that the progress of this process, to improve Asset Management processes and systems, is being tracked and audited.

The Asset Management Improvement plan is scheduled to take place over the next 5 years, with core Asset Management to be achieved by the end of this year. Council should achieve a predictive modelling approach to asset management and planning by 2010/2011. This will enable Council to optimise its use of available funds via risk analysis and optimised decision making techniques. Planning will be further improved with the refinement of these tools, which is scheduled to follow in 2012. Underpinning this analysis/evaluation capability will be more accurate, detailed and readily available asset data.

An assessment of asset criticality (service risk to customers) and condition is a high priority this year and next, with further condition monitoring, verification and Levels of Service measurement to follow in 2010. By 2011 Council expects to have reliable data with whole life costs known, giving a higher degree of confidence for future planning processes and decisions. Supporting these initiatives will be the development and refinement of associated processes and Asset Management systems and tools that will be better integrated within the core business and utilised by many of the key/expert staff by 2010/2011. Tools such as MatMan, Asset Works Management (AWM), Strategic Asset Management (SAM),

Asset Risk Register (for critical assets) and the GIS computer-based systems are key to the centralisation of asset information and improved data management with respect to access, quality control and user security.

This is a comprehensive program that, if achieved in these timeframes, will bring many benefits to the Council; particularly in respect of the efficient and effective management of assets. Council demonstrated an understanding of its current capability and the level of expertise in Asset Management it wishes to attain. With investment of time and resources in the Asset Management improvements proposed, we believe that Council can achieve a competent level of best practice Asset Management in the near future.

We expect to see further improvements in the justification of future expenditure items and programs by the next Determination. In particular, we would expect that improvements in the available condition and performance data, and subsequent analysis of risk (likelihood and consequence/criticality), will provide the basis for future asset investment. This will become more important as the network assets age further, thereby requiring more difficult investment decisions between rehabilitation versus replacement.

3.2 Capital Planning, Procurement and Project Prioritisation

Council has a well established process in place for determining and prioritising future capital investment that is founded on the preparation and maintenance of long, medium and short term capital plans.

The Strategic Capital Works Plan (long term) is a high level overview of the projected capital program over a 30 year planning horizon. This plan is used to document the strategic direction of Council, whereby long term strategic projects can be identified.

The Rolling Works Program (medium term), provides a relatively detailed plan of anticipated projects over a rolling three year period.

The Capital Works Plan (short term) is a detailed summary of the schemes proposed for delivery during the current year.

There is a clearly defined process in place to identify and then escalate a scheme through the approvals process.

We found that the Council Director, Shire Services (or his/her delegate) reviews and approves all schemes added to the Capital Works Plan, and although we didn't see evidence of this, were advised that the challenge and testing for need and cost effectiveness of schemes was part of this review process.

Once a scheme has been approved it is registered on Project Accounting. Schemes entered onto the program at this stage then go through a 'Capital Works Plan Analysis', which includes preparation of a business case (with various options identified), economic appraisal and whole life costing assessment. In addition to this value management studies are undertaken in order to maximise benefit and value for money.

At the completion of each scheme, we found that Council undertakes a post project review, whereby planned versus actual expenditure is compared and reasons for variance are explored. This represents good business practice that enables continuous improvement and effectively closes the planning loop.

We found that schemes are allocated on the basis of prime purpose for the water program, whilst schemes in the wastewater program are proportionally allocated. We were unable to ascertain the reason for this during our review, but encourage the adoption of proportional allocation across all program areas.

In the case of specific drought related expenditure, schemes have been reported against the 'Growth' driver, on the basis that the completion of these schemes will create additional yield.

We tested the capital planning process by tracking an actual project – 'Refurbishment and Upgrade of C6/C7 PS'. Council demonstrated the process followed in order to assess the condition of the existing asset, risk of failure and capacity deficiencies. We saw evidence to confirm that four options were considered and the analysis undertaken supports the preferred option on the basis of whole life costs. Through the escalation of the scheme through the various approvals and scheme development processes, we saw that the following revision to the scheme scope and estimate:

Table 24 Refurbishment and Upgrade of C6/C7 PS - Summary of Scheme Costs ($M nominal)

Strategic Capital Works Plan	Rolling Works Program	Capital Works Plan
$2.14	$1.5	$1.28

However, in reviewing the capital program, we did find that Council still utilises block allocation projects within its capital program. These generic projects allow for expenditure against a yet to be determined outcome, which makes it difficult to demonstrate its efficiency or effectiveness and need to be further minimised in a regulated environment.

Whilst the current processes ensure all proposals are subject to public consultation, it does not lead to a robust understanding of customer's willingness to pay and the trade off between the improvement in service offered and the prices paid.

In undertaking our review of the capital planning process we queried the mechanisms within the process to drive efficiency and promote further cost effectiveness. Council advised that it has market tested its Day Labour workforce with Contract labour in terms mains replacement activity, but has not yet considered adopting innovative procurement strategies. However, it intends to consider various alternative approaches in the future.

3.3 *Capital Expenditure Review*

Council's proposed capital expenditure profile for delivery during the 2009 Determination period is shown in **Table 25**.

Table 25 Proposed Capital Expenditure Profile ($000 2008/09 real)

Table 9.3 AIR/SIR	2009/10	2010/11	2011/12	2012/13	Total
Water	93,385	25,735	7,058	10,724	136,902
Wastewater	32,048	9,989	9,314	9,437	60,788
Stormwater	9,074	7,903	8,023	8,122	33,122
Total	134,507	43,627	24,395	28,283	230,812

Within the proposed program, expenditure has been split between the various expenditure drivers, as shown in **Table 26**, below.

Table 26 Forecast Expenditure by Driver ($000, 2008/09 real)

Driver	2009/10	2010/11	2011/12	2012/13	Total
Growth – Developer*	117,527	28,191	9,079	12,033	166,830
Mandatory	4,245	2,252	3,063	3,064	12,624
Discretionary	12,735	13,184	12,253	13,186	51,358
Total	134,507	43,627	24,395	28,283	230,812

Note (*) Council has opted to report JWS related expenditure against 'Growth – funded by cash capital contributions'.

As part of our review of the Council's proposed capital expenditure program, we undertook a detailed examination of a representative sample of projects, either being currently delivered or proposed for delivery during the 2009 Determination period.

Using a selection criterion based primarily on project driver and project value (i.e. projects with a value > $1M), we selected nine (9) projects for detailed review. These are shown in **Table 27**.

Table 27 Schemes selected for Review ($000, 2008/09 real)

Project Title	Prog. Area	Project Number	Actual Spend 06/07 to 08/09	Forecast Spend 09/10 to 12/13	Total
JWS - Hunter Water Connection	Water	W38 & W39	16,681	-	16,681
JWS – Groundwater Extraction Projects	Water	W41	7,480	-	7,480
JWS - Mardi to Mangrove Transfer System	Water	W88	13,313	41,799	55,112
General Water Main Replacement Program	Water	W12	2,804	3,200	6,005
Toukley Effluent Re-use Scheme	Recycled Water	W53	Commercial in confidence		
Toukley STW Inlet Works	Wastewater	S108	1,276	1,367	2,643
Warnervale Water Quality A1 & B6	Stormwater	R605	2,831	-	2,831

When compared to the overall capital program, the above projects represent 25% of the program in terms of capital value (excluding recycled water). When considering each of the separate program areas, the selected projects represent 38%, 3%, and 6% of the water, wastewater and stormwater programs respectively.

In completing our detailed reviews of the above projects, we sought to:

- Identify the need for the project.
- Identify the key drivers for investment and identify how the expenditure has been allocated.
- Understand the approach to solution development adopted. Identify the alternative options considered and the basis for the preferred solution.
- Understand the basis of the cost build-up and whether any contingencies or allowances have been applied to capital expenditure forecasts.
- Understand the proposed method of procurement and delivery profile of the project.
- Identify the proposed outputs of each project.
- Assess the prudence and cost effectiveness of each project.

Our detailed project descriptions are included within **Appendix A**, however, we have summarised our findings and recommendations within the relevant program areas below.

3.4 Water

3.4.1 Historical Expenditure

Within its 2006 Determination, Council agreed to deliver a defined program of works against the agreed delivery profile:

Table 28 Water Service Capex Expenditure profile vs. Determination ($000, 2008/09 real)

	2006/07	2007/08	2008/09	Total
Determination	42,132	8,339	3,621	54,091
Actual/Forecast (per Table 9.3 AIR/SIR)	32,915	16,863	44,663	94,442

Of the four separate water projects chosen for review (refer **Table 27**), the following two projects will be delivered during the current Determination and have incurred significant spend to date:

- JWS – Hunter Water Connection; and
- JWS – Groundwater Extraction Projects.

For each of the projects we have provided a brief summary of our findings, including our assessment of prudence. Detailed project descriptions are included in **Appendix A**.

JWS – Hunter Water Connection

Summary of Project

During the early period of the drought, the Hunter connection was originally designed to provide 6ML/d of treated water supply from the Hunter Water Corporation (HWC) area to the Gosford/Wyong (JWS) area. As the drought worsened, the strategic importance of the Hunter Connection became more apparent and an expansion of the connection up to 20ML/d, 25ML/d and finally 33ML/d was pursued to improve security of supply primarily for Gosford/Wyong due to the drought.

The connection can supply a further 2ML/d (to 35ML/d) in the early period of the agreement (2006-2026) however; Hunter Water limited agreement to 33ML/d due to concerns of capacity at the end of the agreement. An added benefit came from enabling Hunter Water to also draw treated water into its system from the

JWS area in times of need. An operational arrangement was negotiated and a 20 year contract was agreed, outlining the constraints of use for the connection.

There were four main scheme pipeline components:

- Wyong to Bushells Ridge – at Gosford Wyong Councils Water Authority (GWCWA) cost;
- Bushells Ridge to Morrisett – shared cost GWCWA/HWC;
- Hunter system north of Morrisett – shared cost GWCWA/HWC; and
- Additional section in the north of HWC's area - shared cost GWCWA/HWC.

The latter component also included modifications to the water treatment plant (step screen and pumping station) to provide a more reliable and secure quality of supply.

Cost Comparison

According to Council's submission, the total projected capital cost for the project was $39.73M. It was actually delivered for $36.23M, with the costs being shared equally between Gosford and Wyong Councils, managed through the JWS Agreement. The scope increase doubled the cost from $17.97M reported to IPART in 2005. This was due to the need to increase the transfer rate up to 33ML/d (works completed in 2007/08 to 2008/09) to provide drought relief and also works to improve and ensure transfer reliability (security of supply). The scheme was also contributed towards by the Federal Government under a WaterSmart grant to the value of $4.825M.

Assessment of Prudence

Given the need for drought relief to be delivered quickly during the course of the worst drought on record, and the fact that other resource options such as desalination and groundwater were less viable or more expensive, the Hunter Connection project was the one major alternative resource that the GWCWA could rely on during this time to supply customers in the Gosford/Wyong area. We therefore believe that the project was a prudent choice to address the water shortages of the drought. Subsequent yield increases and additional security/reliability measures incorporated into the project since the last Determination have doubled the cost of the project. We see that this approach, as has been adopted, compliments the strategy outlined in Water Plan 2050 and provides security of supply in the future to both the JWA and Hunter Water initially for a period of 20 years under the current agreement.

JWS – Groundwater Extraction Projects

Summary of project

In order to potentially increase the available water supply yield, the GWCWA undertook a widespread investigation of the region to determine the availability of reliable groundwater supplies.

In total 110 test boreholes were drilled across the region from the coast to the hinterland, and 7 separate bore fields (producing a reliable yield of ~ 7 Ml/d) were identified.

For each of the borefields a variety of options were considered. Whilst transfer options were adopted for most sites, a standalone membrane 'Ultra' filtration plant was proposed, for Woy Woy, with pre-treatment for iron, manganese, colour and turbidity.

Cost comparison

When compared to the 2005 Determination and the subsequent IPART expenditure review (2006), forecast levels of expenditure have escalated significantly. As demonstrated in table 29 below, forecast costs have increased by 38% since the last review in 2006 and 83% since the 2005 Determination.

Table 29 Groundwater Expenditure Comparison ($000 nominal)

	2004/05	2005/06	2006/07	2007/08	2008/09	Total
2005 Determination	1,130	1,700	1,700			4,530
2006 IPART Review (May 2006)	5,580	7,130	3,080	1,100		16,900
2009 Determination Review	5,580	6,640	11,060	3,803	~1,000*	27,085

Note (*) Not included in AIR but deemed necessary by Project Manager

We challenged the nature of this significance variance and were advised that it was due to the fact:

- Groundwater sourcing had never before been undertaken by the GWCWA.
- The preliminary investigation was exploratory and not well defined.
- Membrane Ultra filtration was required at the Woy Woy Borefield.
- Unforeseen and extensive environmental monitoring was required to prove the available yields.

Assessment of prudence

Given the high (and escalating) capital cost and reducing yield, the prudence of the groundwater schemes is questionable.

The groundwater schemes formed part of a number of emergency drought alleviation projects initiated and delivered concurrently by the GWCWA. As such, should one of the alternative drought alleviation projects deliver appropriate volumes of potable water, there is a risk that the borefields will not be required and potentially 'mothballed', although the bores are now included in the yield calculation for the system.

Due to the expediency required to locate alternative supplies the groundwater schemes were 'fast tracked' at the expense of efficiency. During our review we saw no substantive evidence that the cost effectiveness or prudence of the schemes were challenged.

The method of procurement was also inefficient, as Gosford City Council did not take advantage of the benefits that clustering of similar type schemes and would have had on both procurement and capital costs.

However, we acknowledge the desperate water resource situation facing the Central Coast, and recognise the need to explore all ground water resource options available and to implement solutions as quickly as possible regardless of the relative cost effectiveness of delivery. For this reason we believe that the need for the investment to be prudent, although not cost effective.

Conclusions and Recommendations

Within the constraints of an operating framework, driven by the ongoing and worsening drought conditions within the Central Coast, we consider the water program delivered within the 2006 Determination to be broadly prudent.

Under normal operating conditions, we do not believe that multiple water resource strategies would have been pursued concurrently, and as such the GWCWA would not have progressed the groundwater option. However, the ongoing and worsening drought conditions necessitated the need to fast track a number of Drought Contingency Projects, in order to secure additional water resources.

As a result of this, projects have been delivered at the expense of efficiency. Costs have escalated significantly from those initially proposed, and in the case of the Groundwater Extraction Projects, available yield has reduced. Projects have been

separately procured and delivered on a piecemeal basis, which reduces the scope to realise procurement efficiencies which are available for schemes of this nature.

The concurrent development of alternative water resource options has also increased the risk of redundant assets (i.e. groundwater sources), particularly when cheaper alternative water resource options (i.e. Hunter Connection) are available.

Based on the circumstances discussed above, we do not believe there were any realistic opportunities for the GWCWA to procure these assets more efficiently. However, as a result of this, and the coincident development of an appropriate asset management framework, Council should now be in a better position to appropriately plan, justify, define and deliver future programs of work. This will provide future opportunities for Council to procure larger/clustered programs of work that will realise economies of scale and reduce procurement/management costs. We consider that introduction of the above mentioned practices could yield a 5-10% reduction in the overall cost of future capital programs.

3.4.2 Proposed Expenditure

As highlighted in **Table 25**, Council is proposing a water related capital program of $134.5M, with the following expenditure profile.

Table 30 Proposed Water Service Capital Expenditure Profile ($000 2008/09 real)

	2009/10	2010/11	2011/12	2012/13	Total
Water Service capex (per Table 9.3 AIR/SIR)	93,385	25,735	7,058	10,724	136,902
Less recycled water schemes reported under Water Service (as identified by Council)	(505)	(1,900)	-	-	(2,405)
Proposed Water Service capex	92,880	23,835	7,058	10,724	134,497

Of the four water projects chosen for review (refer **Table 27**), the following two projects are forecast to be delivered during the 2009 Determination period:

- JWS – Mardi to Mangrove Transfer System; and
- Ongoing Water Main Renewal Program.

We have provided a brief summary of our findings below, including our assessment of prudence. Detailed project descriptions are also included in **Appendix A**.

JWS – Mardi to Mangrove Transfer System

Summary of Project

The GWCWA (managed in this case by Wyong Shire Council) proposes to construct a nominal 20km 1000mmØ transfer main to provide an additional link between Mangrove Creek Dam and Mardi Dam. The project also includes the construction of two large capacity pumping stations, a 2.6km rising main, a low flow fish way and modifications to the inlet/outlets. The modifications to the inlet/outlets will enable additional water to be extracted from Wyong River and Ourimbah Creek during medium to high flows, and allow environmental flows on the Wyong, Mooney and Mangrove Rivers.

Cost Summary

We found that the current estimate of $110M ($55M for each Council) is based on a high level costing exercise, undertaken by Quantity Surveyors, using a number of broad scope assumptions. We believe an estimate of this nature to be accurate to ±30% and may be subject to further variance.

We were advised that the project has received grant funding approval of $80.3M from the Federal Government, and a steering committee has been established to manage the expenditure of this grant. We found that the grant is time limited and will need to be spent by 2010. This represents a significant risk to the GWCWA.

Assuming full realisation of the $80.3M grant, the GWCWA will need to finance the remaining $30M. Both Gosford city Council and Wyong Shire Council have allowed for the full $110M within their respective AIRs. We confirm that the Federal Government grant has also been separately allowed for within the Council's AIR/SIR.

Assessment of Prudence

In terms of maximising available storage capacity and future proofing the Central Coasts water supply, the Mardi to Mangrove Transfer system represents a sound investment decision.

In reviewing the scheme, we saw evidence of that customer support for the project has been sought, and an internal governance structure has been built into the process to ensure the efficient delivery of the scheme.

Cost estimates are still at an early stage of development and may be subject to further variance and possible escalation, although the $80.3M federal grant significantly reduces the financial burden on the GWCWA.

Council has taken steps (through a joint steering committee) to actively manage the expenditure of the grant funding and this should be continued to ensure all funding deadlines are met.

Taking into account the above uncertainties, we believe the Mardi to Mangrove Transfer system is prudent and that it represents good value for money.

Ongoing Water Main Renewal Program

Summary of Project

Council's annual Water Mains Renewal Program (WMR) is designed to replace water mains that have reached the end of their economic and/or useful life.

The Water Mains Renewal Program is currently set within an annual budget based on approximately 1% to 2% of the replacement cost of the assets, and delivery is targeted to assets with a high failure rate or high risk of failure that indicates that the infrastructure assets are nearing their useful life.

Following an analysis of bursts on an annual basis, problem areas are identified for renewal/rehabilitation. Five (5) breaks in five (5) years or three (3) breaks in one (1) year are the main criteria, other than assets with a high consequence of failure, used to determine the first cut of targeted mains for renewal.

Cost Summary

The capital expenditure required for the WMR program of works has been based on an assessment of water pipe asset age and an assumed percentage renewal over time. Council's actual and proposed expenditure profile from 2007 to 2013 is as follows:

Table 31 WMR Capital Expenditure Profile ($000 2008/09 real)

Actual and Budgeted capex			Forecast capex				Total Actual and Budgeted	Total Forecast
2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2006/07 - 2008/09	2009/10 - 2012/13
663	619	1,523	800	800	800	800	2,804	3,200

Assessment of Prudence

We believe that Council has proposed a water mains renewal program that is prudent and that the method of scheme selection, prioritisation and delivery is

efficient for the relatively low level of renewals required. The method by which individual schemes are chosen and the procurement method used is established and appears to be working well while the water network asset base is still relatively young.

We do not recommend any specific efficiency target for the WMR program for Wyong for this Determination other than the overall efficiencies we have recommended for the overall forecast capital expenditure (**Section 3.8**).

As the core Asset Management Framework and supporting systems are fully implemented and as Council moves towards an advanced Asset Management approach, improved asset data will inform the build-up and justification of the capital program; in particular the level of WMR proposed beyond 2012/13.

Conclusions and Recommendations

Based on the projects reviewed, we consider the overall proposed water related capital program to be both prudent and necessary. The Mardi to Mangrove Transfer project represents a good example of the use of internal governance to oversee and control the delivery of a large capital project, and we recommend the adoption of a similar approach for the delivery of other large schemes.

There is however an issue with how grants and contributions are accounted for within the 2009 Determination. We were advised that the Mardi to Mangrove Transfer project will be partly financed by an $80.3M Federal Government grant, reducing Council's financial liability to circa $15M for that project.

In terms of the ongoing water main renewals program (WMR), we consider the Councils approach to identifying and prioritising mains replacement to be appropriate, given the age and condition of the Council's asset base. However, as the asset base continues to deteriorate over time, a longer term strategic view of requirements will enable more efficient procurement practices to be adopted, which could further reduce unit costs by 5-10% year on year.

Based on the above findings, we recommend the following capital expenditure for the two schemes.

Table 32 Proposed and Recommended Water Scheme Capital Expenditure Profile ($000 2008/09 real)

Project		2009/10	2010/11	2011/12	2012/13	Total
Mardi – Mangrove Transfer Main	Proposed	34,503	7,296	-	-	41,799
	Recommended	34,503	7,296	-	-	41,799
	Difference	-	-	-	-	-
General WMR	Proposed	800	800	800	800	3,200
	Recommended	800	800	800	800	3,200
	Difference	-	-	-	-	-

Our proposed and recommended capital expenditure for the water service during the coming Determination period is shown in **Table 33**.

Table 33 Proposed and Recommended Water Capital Expenditure ($000 2008/09 real)

	2009/10	2010/11	2011/12	2012/13	Total
Council Submission (Table 9.3 AIR/SIR)	93,385	25,735	7,058	10,724	136,902
Less adjustments for -					
Recycled water schemes included within water service	(505)	(1,900)	-	-	(2,405)
Halcrow Recommended	**92,880**	**23,835**	**7,058**	**10,724**	**134,497**

3.5 Recycled Water

3.5.1 Historical Expenditure

The previous Determination did not include any specific allowance for recycled water schemes.

3.5.2 Proposed Expenditure

Council has not made a pricing proposal for recycled water. However, it is proposing to deliver a number of recycled water projects. We identified one recycled water scheme in **Table 27**, the Toukley Effluent Re-use Scheme, that is forecast to be delivered during the 2009 and 2013 Determination. We have reviewed this scheme in the context of periodic charges and have therefore not included any details of actual or proposed expenditure.

For the above project, we have provided a brief summary of our findings, including our assessment of prudence. A detailed project description is also included in **Appendix A**.

Toukley Effluent Re-use Scheme

Summary of Project

The Toukley effluent re-use scheme was initially developed as a drought alleviation measure to conserve potable water and maintain council owned infrastructure, such as playing fields and ovals.

Following completion of the original scheme which was based on the 1992 NSW Guidelines, regulatory standards from DEUS were updated to reflect national guidance. This identified that an improvement in treated water quality was required. In addition to this, further recycled water customers were identified, increasing the demand o the current re-use plant.

The proposed scheme involves construction of a Dissolved Air Flotation and Filtration (DAFF) process unit with UV treatment and chlorination. Capacity of the re-use plant would increase from 3.6 Ml/d to 7.2ML/d.

Cost Comparison

A contract for the Toukley Effluent Re-use scheme has been agreed and the expenditure that has been recorded to date appears reasonable against the progress made.

Assessment of Prudence

Although the Toukley Effluent Re-use Plant was only constructed in 2005, changes in regulatory standards, to ensure compliance with national guidelines, meant the output from the original process is not of sufficient quality. We were advised that significant restrictions would need to be placed on the use of water from the original process that would be difficult to enforce.

This represents an unacceptable business risk to Council that may compromise public health. For this reason, we consider the investment to be prudent.

We confirm that Council has adopted a reasonable approach to the procurement of this work, and given the large number of existing customers utilising this water believe it represents good value for money.

Conclusions and Recommendations

In the case of the Toukley Effluent Re-use scheme, we believe Council has adopted a reasonable approach to the procurement of this work, and given the large number of existing customers utilising this water believe it represents good value for money. Our only concern with this scheme relates to the fact Council has not fully accounted for the total contract value within its AIR.

3.6 Wastewater

3.6.1 Historical Expenditure

Within its 2006 Determination, Council agreed to deliver a defined program of works against the agreed delivery profile, shown below. Whilst the spend profile differs from that initially agreed, the overall level of spend is similar.

Table 34 Wastewater Service Capex Expenditure profile vs. Determination ($000, 2008/09 real)

	2006/07	2007/08	2008/09	Total
Determination	12,069	9,655	8,009	29,734
Actual/Forecast (per Table 9.3 AIR/SIR)	6,756	2,903	15,411	25,070

As identified in **Table 27**, we reviewed one wastewater related project, that was initiated and partially delivered during the current Determination and has incurred significant spend to date. It is anticipated that the project will be delivered during the 2009 Determination. We provide a brief summary of our findings, including our assessment of prudence below. Detailed project descriptions are also included in **Appendix A**.

Toukley STW Inlet Works

Summary of Project

The Toukley Sewage Treatment works was built in the late 1960's and the associated inlet works are now in excess of 35 years old and have not been subject to any major modifications since built. Consequently, significant maintenance and serviceability need to be addressed relating to:

- Inefficient screens - the 24mm bar screens allow rag and grit to pass through to the treatment process and into the sludge, which limits the application of the sludge for further use. Substantial maintenance is required to ensure their operation, which is particularly difficult as the installed equipment is obsolete and requires expensive spares fabrication. Screens of 3mm/5mm would be more appropriate.
- Serious corrosion of both steel components and the concrete reinforcement was prevalent in some places.
- Screenings produced are wet and are therefore not conducive to keeping disposal costs at a minimum.

- Grit removal is in serious disrepair, requiring a high degree of manual intervention.
- Screenings/grit removal system was inefficient comprising of Otto bins requiring daily visits from Operators to ensure operation and disposal.
- Community standards have changed such that the potential for odour issues are higher risk now than when the STP was first built.

Cost Comparison

At the project initiation stage, capital cost estimates were based on the concept design at +/-50% accuracy. Further cost refinement was achieved at the completion of the concept design stage (+/-25%). Following the review of the detailed design report, a project out-turn cost of $2.587M (nominal) was estimated. This is close to the estimated cost from 2009 to 2011 of $2.64M ($2008/09) estimated in the SIR for the 2008 submission.

We note that the price includes for a contingency of ~10% for any rectification issues arising at the handover from the final commissioning stage of the project.

The Monthly Report from August 2008 provided for the project was comprehensive in nature and showed that the detailed design stage was tracking well. We have already noted the cost change above, which will be reviewed by an independent quantity surveyor and require a Budget Amendment form to update the financial figures on the system. The current scheme cost within the Oracle database for completion is $1.7M but this figure requires updating by Asset Planning to reflect the increased costs included for Project Management and Construction activities by the detailed designer.

Assessment of Prudence

We are of the opinion that this scheme is prudent and justifies the benefits to be achieved. It is possible however that the costs will increase further during the construction stage. We expect that cost increases can be minimised through tight project management which has seen an increased budget allowance for this activity to ensure that budgets remain controlled. The total outturn cost realised should therefore fall within a theoretical maximum total of $3M.

Conclusions and Recommendations

Based on our understanding of the current wastewater capital program and the project reviewed and summarised above, we consider the program to be prudent and cost effective.

3.6.2 *Proposed Expenditure*

As highlighted in **Table 25**, Council is proposing a wastewater related capital program of $61M, with the expenditure profile shown in **Table 35**.

Table 35 Proposed Wastewater Service Capital Expenditure Profile ($000 2008/09 real)

	2009/10	2010/11	2011/12	2012/13	Total
Wastewater (per Table 9.3 AIR/SIR)	32,048	9,989	9,314	9,437	60,788

We reviewed in detail the Toukley STW Inlet Works project. We have provided a brief summary of our findings, including our assessment of prudence, in **Section 3.6.2** above.

Conclusions and Recommendations

Based on our understanding of the current wastewater capital program and the project reviewed and summarised in **Section 3.6.2**, we consider the program to be prudent and cost effective. The proposed and recommended wastewater capital expenditure for the coming Determination period is shown in **Table 36**.

Table 36 Proposed and Recommended Wastewater Capital Expenditure ($000 2008/09 real)

	2009/10	2010/11	2011/12	2012/13	Total
Council Submission (Table 9.3 AIR/SIR)	32,048	9,989	9,314	9,437	60,788
Halcrow Recommended	32,048	9,989	9,314	9,437	60,788

3.7 Stormwater

3.7.1 Historical Expenditure

Within its 2006 Determination, Council agreed to deliver a defined program of works against the agreed delivery profile shown in **Table 37**.

Table 37 Stormwater Service Capex Expenditure profile vs. Determination ($000, 2008/09 real)

	2006/07	2007/08	2008/09	Total
Determination	6,144	6,583	7,022	19,749
Actual/Forecast (per Table 9.3 AIR/SIR)	5,492	3,916	8,876	18,284

We did not review a stormwater scheme that was included within the 2006 Determination, however, we believe the project selected from the proposed program (discussed below in **Section 3.7.2**), to be representative of typical stormwater projects delivered to date.

3.7.2 Proposed Expenditure

As highlighted in **Table 25**, Council is proposing a stormwater related capital program of $33.1M, with the expenditure profile shown in **Table 38**.

Table 38 Proposed Stormwater Service Capital Expenditure Profile ($000 2008/09 real)

	2009/10	2010/11	2011/12	2012/13	Total
Stormwater (Table 9.3 AIR/SIR)	9,074	7,903	8,023	8,122	33,122

We have reviewed in detail one stormwater scheme which is forecast to be delivered during the 2009 Determination. We have provided a brief summary of our findings, including our assessment of prudence below. Detailed project descriptions are also included in **Appendix A**.

Warnervale Water Quality A1 & B6

Summary of Project

This is a Section 94 (Developer Contributions) funded project that was identified under the District Contributions Plan (DCP) through study work conducted 10 years ago. The original concept and management considerations for the project identified 10 to 15 small projects to assist with remediation of Porters Creek wetland. From the original study, a smaller report was developed to assess the options in greater detail, of which Warnervale was one of the minor sites originally investigated on which to provide remedial action to protect the wetland.

Warnervale is a growth site in the Wyong Council area and related flooding issues are being addressed through other projects in addition to this one.

The general concept involves the removal of phosphorous, litter and suspended solids by installing and establishing a reed bed in the constructed wetland which can polish the stormwater effluent. The stormwater will flow through the constructed wetland to the outlet and into the existing drainage lines discharging to Porters Creek wetland. Ultimately the overland flow ends up in the river after making its way through the wetland.

Cost Summary

This project was originally estimated by consultants to cost $1M (eight years ago). Uplifting this figure and modifying the project to suit the current project scope gives a total spend of $1.5M in real terms. Some of the increases are due to the increase in tipping fees to landfill from $15/tonne to $50/tonne and increased engineering resource rates. We note that the unit rates used to give the project cost of $2.8M are in line with a similar project (Bateau Bay) delivered in-house by Council approximately 2 years ago. The additional $1.4M will be spent on additional scope items required to alleviate flooding including culverts in Warnervale Road ($500k) and a collector road at Mataram Road, Warnevale ($800k) that inundates.

With respect to funding, Section 94 contributions when indexed to 2008/09 prices total ~$2.83M, which should cover the cost of the project.

Assessment of Prudence

We believe this scheme to be prudent and justifiable. The option chosen is both feasible and cost-effective, while project delivery can be staged to meet

development construction rates over time. The technology chosen for use in this project has been proven and is environmentally sound.

The unit rates required to do the work are in line with previous work of a similar nature and developer contributions are expected to cover the capital works. As Council has undertaken similar work recently, we expect the outturn cost will be very close to that reported, at $2.8M.

Conclusions and Recommendations

Based on our understanding of the current stormwater capital program and the project reviewed and summarised above, we consider the program to be prudent and cost effective.

The proposed and recommended wastewater capital expenditure for the coming Determination period is shown in **Table 39**.

Table 39 Proposed and Recommended Stormwater Capital Expenditure ($000 2008/09 real)

	2009/10	2010/11	2011/12	2012/13	Total
Council Submission (Table 9.3 AIR/SIR)	9,074	7,903	8,023	8,122	33,122
Halcrow Recommended	9,074	7,903	8,023	8,122	33,122

3.8 Delivery and Efficiency

We have not specifically investigated new capital efficiency targets for Wyong Council, but have briefly reviewed the targets set in previous reviews in the context of the current operating environment and the Council's proposed capital expenditure, and used this as the basis of our assessment.

Within the framework of the current Determination and the need to respond to the worsening drought situation, a significantly enhanced capital program has been necessary, delivered at the expense of efficiency.

As demonstrated throughout this report, the scope and value of the capital program has, by necessity, increased significantly from that initially agreed. As such, it is almost impossible to assess and capture actual achieved program efficiencies.

Furthermore, based on the apparent difficulty Council has encountered delivering schemes to budget, let alone at reduced cost, efficiency targets set at program level are unlikely to be realised. However, in light of the fact the Council is in the process of developing a sound asset management framework and are looking at the way in which programs of work can be delivered more efficiently, we consider that the potential for efficiencies exist and that Council should actively pursue and capture these. As such, we recommend the efficiency targets shown in **Table 40** going forward:

Table 40 Proposed Capital Expenditure Efficiency Targets

Efficiency Targets	2009/10	2010/11	2011/12	2012/13
Capital Program	0.0%	1.0%	2.0%	3.5%

3.9 Recommended Capital Expenditure Projections

Council's proposed and Halcrow's recommended capital expenditure for the price path period 2009/10 to 2012/13 is summarised in **Table 41**. The figures include allowances for efficiency gains.

Table 41 Proposed and Recommended Capital Expenditure ($000 2008/09 real)

	2009/10	2010/11	2011/12	2012/13	Total
Council's Submission (T9.3 AIR/SIR)					
Water	93,385	25,735	7,058	10,724	136,902
Wastewater	32,048	9,989	9,314	9,437	60,788
Stormwater	9,074	7,903	8,023	8,122	33,122
Total Proposed Capex	***134,507***	***43,627***	***24,395***	***28,283***	***230,812***
Halcrow Recommended					
Water	92,880	23,835	7,058	10,724	134,497
Wastewater	32,048	9,989	9,314	9,437	60,788
Stormwater	9,074	7,903	8,023	8,122	33,122
Total Recommended Capex	***134,002***	***41,727***	***24,395***	***28,283***	***228,407***
Efficiency Target (%)	0.00%	1.00%	2.00%	3.50%	
Efficiency savings					
Water	-	(238)	(141)	(375)	(755)
Wastewater	-	(100)	(186)	(330)	(616)
Stormwater	-	(79)	(160)	(284)	(524)
Capex (post -efficiency)					
Water	92,880	23,597	6,917	10,349	133,742
Wastewater	32,048	9,889	9,128	9,107	60,172
Stormwater	9,074	7,824	7,863	7,838	32,598
Total capex (post-efficiency)	***134,002***	***41,310***	***23,907***	***27,293***	***226,512***

4 Output Measures

As part of the 2006 Determination, a combination of output (activity) measures were proposed, based on both the delivery of key JWS schemes and a number of other performance based measures, relating to asset renewals.

We agree with the continuation of the specific JWS output measures to ensure the timely completion of the various water resource schemes currently being delivered.

However, we do not believe other asset performance based measures are appropriate at this stage, until the proposed asset management framework has been fully established and systems are in place to accurately capture performance data.

With this in mind, we consider it may be more appropriate to measure progress against the established timeframes for implementing the core and advanced asset management framework system improvements.

We would expect the majority of this work to be substantially complete during the coming Determination period and that future capital programs will be based on actual asset performance or condition.

In addition to the above, given the significant overspend reported on a number of projects delivered to date, it may be appropriate to measure 2009 Determination estimates against actual project outturn, for all major projects above the materiality threshold. We would therefore expect costs submitted in the next submission to be accurate to within ±20%

5 Conclusions

5.1 Operating Expenditure

5.1.1 Historical Expenditure

Council's submission to IPART indicates that operating expenditure has exceeded the 2006 Determination and that Council forecasts that its operating expenditure requirements will increase (in real terms) over the period of the next Determination.

We have reviewed Council's historical operating expenditure to assess its efficiency and suitability for use at the foundation for the analysis of proposed operating expenditure.

Council has significantly overspent the operating expenditure set by IPART in the 2006 Determination. The majority of this over-expenditure was incurred within the water service, and it was aimed at improving the security of supply during the recent prolonged drought. Much of this expenditure is extraordinary, and the operating expenditure proposed by Council is significantly reduced from 2006/07. Expenditure on the Corporate Overhead Charge was also in excess of IPART's Determination.

We have some concerns over Council's historical level of expenditure as there appears to be a distinct disconnect between Council's annual budgets and those allowed by IPART in the Determination. Council's annual budgets for the 2006/07 to 2008/09 period bear little resemblance to those determined by IPART. This highlights a disconnect between the operations and expenditure deemed justified and efficient by IPART, and Council's actual operations and budgets. Furthermore, Council's operating expenditure is categorised according to the reporting categories in the Management Plan rather than by the activities or items identified by IPART. While we understand that Council has adopted this approach to remain consistent with the Management Plan, this has complicated our analysis of the variation between Council's historic expenditure and that set by IPART in the 2006 Determination. This in turn has frustrated our efforts to gain sufficient assurance that Council's historical expenditure has been prudent and efficient.

5.1.2 Proposed Expenditure

Our analysis indicates that Council's proposed expenditure is significantly higher than that approved by IPART in the last Determination. Council's method of projecting operating expenditure, whereby it rolls forward the total base operating

expenditure from the previous year and makes adjustments for known changes means that inefficiencies are likely to be rolled forward. This raises questions as to the prudence and efficiency of Council's operating expenditure projections.

On the basis of our analysis we have recommended that some adjustments be made to Council's proposed operating expenditure for the water, wastewater and stormwater services. In our report we have also discussed the scope for Council to increase the efficiency of its operations.

5.2 Capital Expenditure

5.2.1 *Historical Expenditure*

Within the constraints of an operating framework, driven by the ongoing and worsening drought conditions within the Central Coast, we found expenditure against the 2006 Determination to be broadly prudent.

Under normal operating conditions, we do not believe that multiple water resource strategies would have been pursued concurrently, and as such the JWS probably would not have progressed a number of the projects, particularly the groundwater option. However, the ongoing and worsening drought conditions necessitated the need to fast track a number of Drought Contingency Projects, in order to secure additional water resources.

As a result of this, projects within the 2006 Determination have been delivered at the expense of efficiency. Costs have escalated significantly from those initially proposed, and in the case of the Groundwater Extraction Projects, available yield has reduced. Projects have been separately procured and delivered on a piece-meal basis, which reduces the scope to realise procurement efficiencies which are available for schemes of this nature.

The concurrent development of alternative water resource options has also increased the risk of redundant assets (i.e. groundwater sources), particularly when cheaper alternative water resource options (i.e. Hunter Connection) are available.

Based on the circumstances discussed above, we do not believe there were any realistic opportunities for JWS to procure these assets more efficiently. However, as a result of this, and the coincident development of an appropriate asset management framework, Council should be in a better position to appropriately plan, justify, define and deliver future programs of work. This will provide future opportunities for Council to procure larger/clustered programs of work that will realise economies of scale and reduce procurement/management costs. We

consider that introduction of the above mentioned practices could yield a 5-10% reduction in the overall cost of future capital programs.

5.2.2 *Proposed Expenditure*

When considering the overall capital program proposed for delivery during the 2009 Determination, and based on the representative sample of projects reviewed, we have drawn the following conclusions.

Water Program

We consider the overall proposed water related capital program to be both prudent and cost effective. The Mardi to Mangrove Transfer project represents a good example of the use of internal governance to oversee and control the delivery of a large capital project, and we recommend the adoption of a similar approach for the delivery of other large schemes.

In terms of the ongoing water main renewals program (WMR), we consider the Councils approach to identifying and prioritising mains replacement to be appropriate, given the age and condition of the Council's asset base.

Recycled Water Program

Council has not made a pricing proposal for recycled water. Our review of Council's recycled water program has been in the context of periodic charges and therefore we have not included any details of actual or proposed expenditure.

We undertook a detailed review of the Toukley Effluent Re-use scheme. We believe that Council has adopted a reasonable approach to the procurement of this work, and given the large number of existing customers utilising this water believe it represents good value for money.

Wastewater Program

Based on our understanding of the current wastewater capital program and the project reviewed and summarised in **Section 3.6**, we consider the program to be prudent and cost effective.

Stormwater Program

Based on our understanding of the current stormwater capital program and the project reviewed and summarised in **Section 3.7**, we consider the program to be prudent and cost effective.

6 Recommendations

This section provides a summary of our recommended total capital and operating expenditure for water, wastewater and stormwater. It also includes our recommendation for operating expenditure for corporate activities related to the water, wastewater and stormwater services for Wyong Shire Council.

6.1.1 Operating Expenditure

We have reviewed Council's 2007/08 AIR/SIR submission and its historical and proposed operating expenditure and have assessed whether the expenditure is both prudent and efficient. We have recommended some adjustment to the proposed expenditure where we believe that it is not efficient, or where we do not consider it reasonable to include these items within the Determination operating expenditure.

Based on our review, we have developed a recommendation of operating expenditure for the coming Determination period. The proposed and recommended operating expenditure for the coming Determination period is shown in the following figure. Expenditure is shown inclusive of efficiencies identified in **Section 2.7**.

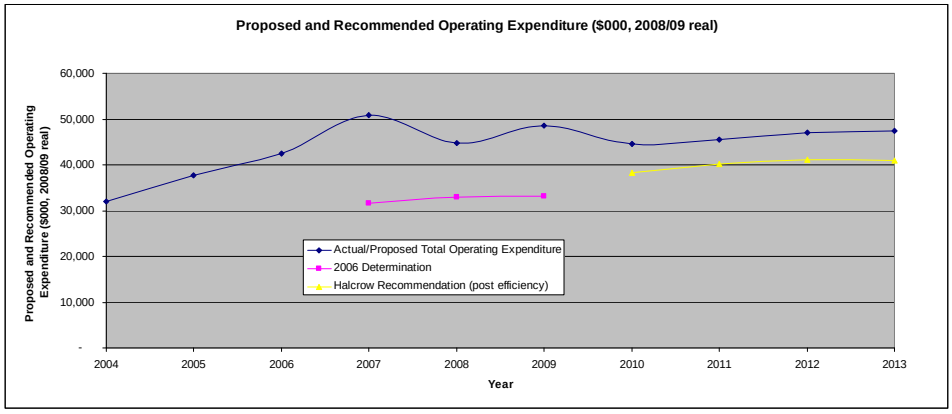

Figure 12 Proposed and recommended Operating Expenditure ($000 2008/09 real)

The proposed and recommended operating expenditure for the coming Determination period is also shown in the following table. The figures are inclusive of allowances for efficiency gains identified in **Section 2.7**.

Table 42 Proposed and Recommended Operating Expenditure ($000 2008/09 real)

	2009/10	2010/11	2011/12	2012/13	Total
Council Submission (Table 3.5 AIR)					
Corporate Overheads[1]	18,772	17,771	17,506	17,229	71,277
Water	13,499	14,581	15,132	14,666	57,878
Wastewater	9,542	9,737	9,922	10,111	39,312
Stormwater	1,441	1,652	1,890	2,137	7,120
Total Proposed Opex (post-efficiency)	43,254	43,741	44,450	44,143	175,587
Halcrow Recommended					
Corporate Overheads[2]	9,698	9,778	9,847	9,917	39,240
Water	16,178	17,697	18,309	17,921	70,105
Wastewater	11,646	11,954	12,211	12,477	48,288
Stormwater	1,016	1,030	1,045	1,064	4,155
Total Recommended Opex (post-efficiency)	***38,539***	***40,458***	***41,412***	***41,378***	***161,787***
Add back efficiency already applied by Council					
Water	48	49	51	52	200
Wastewater	112	94	96	97	399
Stormwater	9	10	10	10	40
Halcrow Recommended					
Corporate Overheads[2]	9,698	9,778	9,847	9,917	39,240
Water + add back efficiency already applied	16,226	17,746	18,360	17,973	70,305
Wastewater + add back efficiency already applied	11,759	12,047	12,307	12,573	48,687
Stormwater + add back efficiency already applied	1,025	1,040	1,056	1,074	4,195
Total Recommended Opex (pre- efficiency)	***38,708***	***40,611***	***41,570***	***41,537***	***162,426***
Efficiency Target	1%	1%	1.25%	1.25%	0
Efficiency Allowance[3]	(387)	(406)	(520)	(519)	(1,832)
Recommended Efficiency					0
Corporate Overheads	(97)	(98)	(123)	(124)	(442)
Water	(162)	(177)	(229)	(225)	(794)
Wastewater	(118)	(120)	(154)	(157)	(549)
Stormwater	(10)	(10)	(13)	(13)	(47)

	2009/10	2010/11	2011/12	2012/13	Total
Recommended Opex (post-efficiency)					
Corporate Overheads	9,601	9,680	9,724	9,793	38,798
Water	16,064	17,568	18,130	17,748	69,511
Wastewater	11,641	11,927	12,154	12,416	48,138
Stormwater	1,015	1,030	1,043	1,061	4,148
Total Recommended Opex (post-efficiency)	***38,321***	***40,205***	***41,050***	***41,018***	***160,594***

Note (1) The Corporate Overhead Charge for the water service has been adjusted (refer **Section 2.2.2**), and hence this figure does not tie to Table 3.5 of Council's AIR/AIR.
(2) Includes reallocation of corporate overhead from stormwater service 'Other Provisions'
(3) The efficiency target has only been applied to the water, wastewater and stormwater services.

6.1.2 Capital Expenditure

We have reviewed the Council's proposed capital program for the 2009 Determination and its historical and capital expenditure and have assessed whether the expenditure is both prudent and efficient. Based on our review we are satisfied that the proposed capital program is prudent and justified. Council has not separately reported its recycled water schemes within its AIR/SIR. In our recommended capital expenditure for the water service we have excluded Council's recycled water schemes. We are not proposing any other adjustments to Council's capital program.

Our proposed and recommended capital expenditure for the coming Determination period is shown below:

Table 43 Proposed and Recommended Capital Expenditure ($000 2008/09 real)

	2009/10	2010/11	2011/12	2012/13	Total
Council's Submission					
Water	93,385	25,735	7,058	10,724	136,902
Wastewater	32,048	9,989	9,314	9,437	60,788
Stormwater	9,074	7,903	8,023	8,122	33,122
Total Proposed Capex	134,507	43,627	24,395	28,283	230,812
Halcrow Recommended					
Water	92,880	23,835	7,058	10,724	134,497
Wastewater	32,048	9,989	9,314	9,437	60,788
Stormwater	9,074	7,903	8,023	8,122	33,122
Recommended Capex	134,002	41,727	24,395	28,283	228,407
Efficiency Target (%)	0.0%	1.0%	2.0%	3.5%	0.0%
Efficiency savings					
Water	-	(238)	(141)	(375)	(755)
Wastewater	-	(100)	(186)	(330)	(616)
Stormwater	-	(79)	(160)	(284)	(524)
Capex (post - efficiency)					
Water	92,880	23,597	6,917	10,349	133,742
Wastewater	32,048	9,889	9,128	9,107	60,172
Stormwater	9,074	7,824	7,863	7,838	32,598
Total capex (post-efficiency)	134,002	41,310	23,907	27,293	226,512

Appendix A Project Summaries

Project Title – *JWS Hunter Connection*

In 2004, as a result of the severe drought on the Central Coast, Hunter Water and the Gosford Wyong Councils Water Authority (GWCWA) agreed to boost the water main connection between Hunter Water and the Central Coast (Gosford/Wyong) up to 6ML/d through the installation of a booster pump and connection modifications. Council was also investigating desalination as a contingency water resource, as well as new groundwater sources.

At the time, the GWCWA's water resources model indicated that the Joint Water Supplies (JWS) required an additional 20ML/d for the duration of the drought. Three strategies were therefore developed in parallel – Desalination; the Hunter Connection, and new Groundwater sources (see the JWS Groundwater project summary for details).

Due to the costs associated with desalination, and delays in obtaining regulatory approvals, the GWCWA deemed that it would only develop this option to the point where, if required, it could be implemented with relative ease. It was agreed to progress other more viable options, such as the Hunter Connection, further.

The GWCWA determined that the additional 14ML/d required to ensure security of supply was best delivered by the Hunter Connection. The GWCWA deemed that any expansion of the Hunter Connection would be required to fit in with the long term water resources strategy [which would become known as Water Plan 2050.

As the existing pipeline for the Hunter Connection could not service the pressures required to deliver water >6ML/d, additional investment in this water supply option was required to deliver greater security of supply. The key for the expansion of the Hunter Connection was that the route of the new pipeline was able to follow the F3 and link in with the northern area of Wyong Shire to pick up growth area at Warnervale that would soon require a new pipeline to feed the area.

Key to the security of supply benefits of the Hunter Connection was the ability to feed treated water both ways, resulting in a mutual benefit for both parties. Joint modelling indicated that expansion of the water supply from the Hunter Connection would be increased further to provide greater long term benefits. 'Pinch-points' were discovered in Hunter Water's network requiring greater flows

to Morriset, serviced by an additional pumping station and new pipeline to provide greater capacity. While Hunter Water would benefit from the scheme in the long term, the timing of the scheme was primarily driven by GWCWA.

The GWCWA agreed to pay $2.97M for the Morriset to Wyee upgrade/connection so that Hunter Water would bring the works forward. It was agreed that once Hunter Water used the assets, it would refund the GWCWA half of the original capital cost. The security of supply benefit of the connection has already been used by Hunter Water. It has used GWCWA treated water in the southern part of its network during times of network maintenance, thus negating the need to rezone. We note that, at this point in time the Hunter Connection, including the link to Morriset, was capable of supplying 26ML/d.

Triggers and rules over the use of the Hunter Connection by the GWCWA were agreed. These were based on water restrictions (dam levels) and a joint-sharing of the risk.

As the drought heightened, another change to the negotiated agreement for the use of the Hunter Connection was agreed. An additional 7km of pipe was required to improve the total yield and increase it to 33ML/d. This also involved a pumping station upgrade. The agreement was designed to provide greater security to the GWCWA up to 2026 (for a period of 20 years).

It should be noted that even when the Mardi to Mangrove link is in place, the GWCWA will still require the 33ML/d Hunter Connection to achieve its 2050 water supply demand. Although, due to the higher marginal cost of water, neither the Hunter Connection nor the groundwater sources (similar cost of production per unit volume of water) would be used when water is over-flowing the weirs of the smaller dams in the GWCWA supply area.

Brief Description of Project

During the early period of the drought, the Hunter connection was originally designed to provide 6ML/d of treated water supply from the Hunter Water Corporation (HWC) area to the Gosford/Wyong area. As the drought worsened, the strategic importance of the Hunter Connection became more apparent and an expansion of the connection up to 20ML/d, 25ML/d and finally 33ML/d (with another 2ML/d to come in future) was pursued to improve security of supply primarily for Gosford/Wyong due to the drought.

The connection can supply a further 2ML/d (to 35ML/d) in the early period of the agreement (2006-2026) however; Hunter Water limited agreement to 33ML/d

due to concerns of capacity at the end of the agreement. An added benefit came from enabling Hunter Water to also draw treated water into its system from the GWCWA area in times of need. An operational arrangement was negotiated and a 20 year contract signed, outlining the constraints of use for the connection.

There were four main scheme pipeline components:

- Wyong to Bushells Ridge – at GWCWA cost.
- Bushells Ridge to Morriset – shared cost GWCWA/HWC.
- Hunter system north of Morriset – shared cost GWCWA/HWC.
- Additional section in the north of HWC's area - shared cost GWCWA/HWC.

The latter component also included the modifications to the water treatment plant (step screen and pumping station) to provide a more reliable and secure quality of supply. Environmental monitoring is still ongoing and these modifications may not proceed.

Drivers for Investment

This project has a Security of Supply driver which was considered to fall under Growth (new assets and demand) at a time when water supplies were scarce.

Solution Development

Solution development for this scheme occurred cooperatively and iteratively over the course of the drought between the GWCWA and Hunter Water, in consideration of the strategic resource needs amongst other resource options being considered for Water Plan 2050. Solution options were made simpler by the fact that the pipeline route followed the 25m easement set aside for the existing oil/gas/telecoms corridor near the F3 freeway, which helped to 'fast track' the implementation of the project. However, mitigation measures for protecting the oil, gas and internet cables in particular added significantly to the final cost of the project.

In terms of governance, decisions made on the final solution for the Hunter Connection were via a committee (the Technical Advisory Group) comprised of staff from both Councils. Recommendations from the Technical Advisory Group were made to the Board for endorsement, with the final decision resting with both Councils to ratify. Given the severity of drought, the GWCWA called joint meetings/briefings of both Councils to ensure that all communications were the same, and to avoid delays in decision making. The project was deemed an urgent high priority.

Project Delivery

The scheme was delivered through project managers from the Department of Commerce by tendered contractors. The design was completed before the contractors constructing the scheme could provide any input. The project was delivered by contracts in two halves geographically – works north of Morriset were managed by Hunter Water, while works south of Morriset were managed by the GWCWA, primarily by Wyong Council with oversight by the JWA.

Cost Summary

According to Wyong Council's submission, the total projected capital cost for the project was $39.73M. It was actually delivered under this for $36.23M, with the costs being shared equally between Gosford and Wyong Councils managed through the JWS agreement. The scope increase doubled the cost from the $17.97M reported to IPART in 2005. This was due to increasing the transfer rate up to 33ML/d (works completed in 2007/08 to 2008/09) to provide drought relief, and also works to improve and ensure transfer reliability (security of supply). The scheme also received a contribution of $4.825M from the Federal Government via a WaterSmart grant.

Assessment of Prudence

Given the need for drought relief to be delivered quickly during the course of the worst drought on record, and the fact that other resource options such as desalination and groundwater were less viable or more expensive, the Hunter Connection project was the one major alternative resource that the GWCWA could rely on to supply customers in the Gosford/Wyong area. We therefore believe that the project was a prudent choice to address the water shortages of the drought. Subsequent yield increases and additional security/reliability measures incorporated into the project since the last Determination have doubled the cost of the project. The approach adopted compliments the strategy outlined in Water Plan 2050 and improves security of supply in the future to both the GWCWA and Hunter Water, initially for a period of 20 years.

Project Title – *JWS Groundwater Schemes (W5720 to W5731)*

Brief Description of Project

In order to potentially increase the available water supply yield, the GWCWA, undertook a widespread investigation of the region to determine the availability of reliable groundwater supplies to supplement supplies during the drought.

Due to location of the borefields, this particular Joint Water Supply (JWS) scheme has been managed solely by Gosford City Council.

Borefield Name	Number of Boreholes	Yield (Ml/d)
Ourimbah	10	1.37
Mangrove Weir	3	1.27
Mardi	1	0.12
Braithwaite Park	1	0.14
Somersby	3	0.14
Narara	4	2.07
Town Water Replacement		0.22
Woy Woy	14	3.84
TOTAL	36	9.17

Drivers for Investment

The primary driver for investment was the longstanding and worsening drought conditions adversely affecting the dam water storage levels. Due to the fact that Level 2a water restrictions were in force, and the storage condition was worsening, it was deemed to be both necessary and appropriate to investigate additional sources of potable water. The successful location of a viable groundwater source would improve the security of supply for the region and enhance the available sustainable yield.

Solution Development

Following the identification of a large aquifer in the region (for irrigation purposes), Council engaged Hydrologists to investigate the potential for potable groundwater sources across the region, where no such hydrological assessment had been conducted previously.

In total 110 test boreholes were drilled across the region from the coast to the hinterland, and 7 separate borefields (producing a potential yield of ~ 9.1 Ml/d) were identified.

The selection of the sites identified above was based on the location and yield of the borefield and proximity to an existing water treatment works.

Council advised that prior to long term usage of the groundwater sources, a prolonged monitoring period was required by the DWE in order to verify the reliability of each of the groundwater sources and the sustainability of the yield, at a cost to the JWS of circa $400K/ borefield/year.

We found that sensitivity testing of the available yield was also undertaken in relation to the above monitoring, which has resulted in the downgrading of the available reliable yield to circa 7 Ml/d.

For each of the borefields a variety of options were considered including:

- Treatment of groundwater on site.
- Transfer to a nearby WTW.
- Transfer via WPS to a raw water bulk storage reservoir.

Whilst transfer options were adopted for most sites, a standalone membrane 'Ultra' filtration plant was proposed, for Woy Woy, with pre-treatment for iron, manganese, colour and turbidity.

Project Delivery

At the time of review we found that production borefields were in operation at Ourimbah, Mardi, Braithwaite Park, Mangrove Weir and Somersby, whilst Narara (Stage 1) and Woy Woy were at pre-construction phase. The Town Water replacement schemes are currently being established whilst Narara (Stage 2) was currently being investigated.

Due to the disparate location of the borefields and varying solution development timescales, each site was procured and delivered as a separate project. Within Gosford City Council's AIR, 12 separate projects were established (with project identifiers W5720 to W5731).

Within each project, each element was separately procured either on a supply and install or individual contract basis. A small project delivery team was used to manage the delivery of the projects via Schedule of Rates contracts and tenders for discrete packages of work. We highlighted that this was an inefficient method of

delivery that restricted the potential for economics of scale, however Council argued that the urgency to identify and commission alternative water supplies necessitated this 'fast track' and less efficient approach.

Cost Summary

The initial estimate for delivery of a number of undefined borefields, with an output of circa 17 Ml/d was $18M.

According to the latest budget an estimate of $21M has been allocated to deliver a reliable yield of circa 7 Ml/d, with a final revised estimate of circa $30M expected to complete the cluster of schemes. A summary of the variance in estimates for each scheme are detailed below:

Project	Potential Yield (Ml/d)	2006 Determination Estimate	Current Approved Funding	Expected Outturn
Ourimbah	1.37	$ 6,223 k	$ 6,225 k	$ 6,223 k
Margrove Weir	1.27	$ 2,616 k	$ 2,944 k	$ 2,944 k
Mardi	0.22	$ 261 k	$ 262 k	$ 262 k
Braithwaite Park	0.14	$ 210 k	$ 210 k	$ 210 k
Somersby	0.14	$ 446 k	$ 481 k	$ 481 k
Narara	2.07	$ 2,491 k	$ 5,410 k	$ 7,373 k
Town Water Replacement	0.2	$ 2,367 k	$ 2,799 k	$ 2,799 k
Woy Woy	3.84	$2,230 k	$2,175 k	$8,216 k
Erina	0	$ 637 k	$ 720 k	$ 720 k
Graham Park	0	$ 574 k	$ 600 k	$ 600 k
Total		**$18M**	**$21M**	**$30M**

We challenged the nature of this significance variance from the 2006 Determination to the expected outturn (circa 75 %) and Council advised that the variance was due to the fact:

- Groundwater sourcing had never before been undertaken by the GWCWA.
- The preliminary investigation was exploratory and not well defined.
- Membrane Ultra filtration was required at the Woy Woy Borefield.
- Unforeseen and extensive environmental monitoring was required to prove the available yields.

- Resultant reduction in reliable yield.

Assessment of Prudence

Given the high (and escalating) capital cost and reducing yield, in hindsight the prudence of the groundwater schemes is questionable.

The groundwater schemes formed part of a number of emergency drought alleviation projects initiated and delivered concurrently by the GWCWA. As such, should one of the alternative drought alleviation projects deliver appropriate volumes of potable water, there is a risk that the borefields will not be required and potentially 'mothballed', although the bores are now included in the yield calculation for the system.

The membrane filtration plant at Woy Woy also requires continuous operation (5ML/week) in order to be available for use to provide up to maximum source reliable output, resulting in either unnecessary ongoing operational costs or the potential de-commissioning of an expensive asset in future.

Due to the expediency required to locate alternative supplies the groundwater schemes were 'fast tracked' at the expense of efficiency. During our review we saw no substantive evidence that the cost effectiveness or prudence of the schemes were challenged.

The method of procurement was also inefficient, as Gosford City Council did not take advantage of the benefits that clustering of similar type schemes and would have had on both procurement and capital costs.

Not withstanding the above factors, we acknowledge the desperate water resource situation facing the Central Coast, and recognise the need to explore all ground water resource options available and to implement solutions as quickly as possible regardless of the relative cost effectiveness of delivery. For this reason we believe that the need for the investment to be prudent, although not cost effective.

Project Title – *Mardi to Mangrove Transfer System*

Brief Description of Project

Wyong Shire Council on behalf of the GWCWA proposes to construct a nominal 20km 1000mmØ transfer main to provide an additional link between Mangrove Creek Dam and Mardi Dam.

The project also includes the construction of two large capacity pumping stations, a 2.6km rising main, a low flow fishway and modifications to the inlet/outlets. The modification to the inlet/outlets will enable additional water to be extracted from Wyong River and Ourimbah Creek during medium to high flows, and allow environmental flows on the Wyong, Mooney and Mangrove Rivers.

Drivers for Investment

Within its AIR, Wyong Shire Council has identified 'growth' to be the primary driver for investment.

Whilst the project will increase the available yield within the Gosford/Wyong area, we believe the purpose of the scheme is to provide security of supply, during periods of drought. In addition to this, completion of the project will allow for environmental flows on a number of rivers (though mainly Wyong River). As such, the 'mandatory' driver may be more appropriate for this scheme.

Solution Development

In 2001/02, the Department of Commerce undertook a review of the long term water supply situation in the Central Coast. This was used as the basis for the identification of drought remediation measures and the development of WaterPlan 2050.

Within this review, a number of alternative water supply options were considered, including, amongst others:

- Mardi to Mangrove Transfer link.
- McDonald River link.
- New coastal dam.
- Upper Wyong River Pumping Station.
- Water re-use/Effluent re-use.
- Groundwater.
- Rainwater tanks.

We were advised that all options were issued for public consultation. The results of this were then reviewed by the JWS Technical Advisory Group, the GWCWA Board and both Councils, and the preferred option (Mardi to Mangrove Transfer) was agreed.

In order to progress the development of this scheme, a Special Projects Team (SPT) was engaged. The SPT consists primarily of Wyong Shire Council staff and consultant designers. To add governance to the process, a Project Control Group was established to oversee the development process.

At the time of review, the concept design work was nearing completion. The SPT had commenced detailed engineering and geotechnical investigations and on-site survey work. Environmental data collection activities were also underway.

The nominal scope of the proposed work includes:

- 320 Ml/d pumping station to lift water from Wyong River to Mardi Dam.
- 2.6km rising main from Wyong River to Mardi Dam.
- 120 Ml/d pumping station to lift water from Mardi Dam to Mangrove Creek Dam.
- 20km 1000/1200mmØ rising main, including various river crossings.
- Inlet/outlet upgrades at Mangrove Creek Dam.
- Low flow fishway.
- New gauging station.

Project Delivery

We were advised that the contract is due to be let in 2009, with completion forecast for late 2010/early 2011.

For a scheme of this size and complexity we queried the relatively tight delivery timeframe. Wyong advised that a similar length pipeline (albeit smaller diameter) for the Hunter Water Transfer System was completed in 6-7 months.

Cost Summary

We found that the current estimate of $110M ($55M for each Council) was based on a high level costing exercise, undertaken by Quantity Surveyors, using a number of broad scope assumptions. We believe an estimate of this nature to be accurate to +30% and may be subject to further variance.

We were advised that the project has received grant funding approval of $80.3M from the Federal Government, and a steering committee has been established to

manage the expenditure of this grant. We found that the grant is time limited and will need to be spent by 2010. This represents a significant risk to the GWCWA.

Assuming full realisation of the $80.3M grant, the GWCWA will need to finance the remaining $30M. Both Gosford and Wyong have allowed for the full $110M within their respective AIRs. We confirm that the Federal Government grant has also been separately allowed for within the Council's AIR/SIR.

Assessment of Prudence

In terms of maximising available storage capacity and future proofing the Central Coasts water supply, the Mardi to Mangrove Transfer system represents a sound investment decision.

In reviewing the scheme, we saw evidence of that customer support for the project has been sought, and governance structure has been built into the process to ensure that efficient delivery of the scheme.

Cost estimates are still at an early stage of development and may be subject to further variance and possible escalation, although the $80.3M federal grant significantly reduces the financial burden on the GWCWA.

Council has taken steps (through a joint steering committee) to actively manage the expenditure of the grant funding and this should be continued to ensure all funding deadlines are met.

Taking into account the above uncertainties, we believe the Mardi to Mangrove Transfer system is prudent and that it represents good value for money.

Project Title – *Wyong WMR program (W12)*

Brief Description of Project

Council's annual Water Mains Renewal Program (WMR) is designed to replace water mains that have reached the end of their economic and/or useful life.

The Water Mains Renewal Program is currently set within an annual budget based on approximately 1% to2% of the replacement cost of the assets, and delivery is targeted to assets with a high failure rate or high risk of failure that indicates that the infrastructure assets are nearing their useful life.

Drivers for Investment

Council states that the key drivers for their water mains renewals program are to:

- Maintain regulatory standards.
- Operating licence standards.

Ultimately, the maintenance of a base level of service at a minimum is required to ensure that customers are provided with water at the necessary pressure and within the drinking water guideline standards for water quality.

Solution Development

Following an analysis of bursts on an annual basis, problem areas are identified for renewal/rehabilitation. Five (5) breaks in five (5) years or three (3) breaks in one (1) year are the main criteria, other than assets with a high consequence of failure, used to determine the first cut of target mains for renewal.

Operations are consulted on the 'wish list' generated to identify projects for a particular year prioritised within the budget allowance in the forward program. Potential delivery options are also identified at this stage, along with any non-financial considerations to choose the 'optimum' set of whole life proposal.

The set of alternatives for mains renewal are then peer reviewed through a works shop process including Council staff, Operations, Design & Investigations and Asset Management staff. The preferred option(s) for each scheme is then put forward for design and planning for implementation of the capital works.

By this method there are five to six projects in total identified for 2008 in the capital program. The Asset Planning team also considers the impact of growth (based on adopted DSPs) on the renewals proposed and recommend any augmentation (pipe upsizing) where prudent. Projects of highest priority are

scheduled for renewal first. The priority of renewals is based on a combination of the estimated cost, an assessment of whole life cost for the options preferred including financial and non-financial criteria analysis.

On occasion unplanned [reactive] maintenance activities may require a long section (usually 100m in length or over) of main that has burst to be renewed. Asset Planning has developed a high level Maintenance Plan for managing different material types of water pipe including asbestos cement, mild steel, PVC / GRP and cast iron water mains. While the Maintenance Plan mainly provides guidance to Operations over what reactive action to take such as undertaking repairs/flushing/scouring, there are triggers included to undertake proactive investigations eg. condition assessments to inform Asset Planning for future asset management decision making.

Future improvements

The Operations section currently manages the data relating to burst history for water mains in the network going back to 1987. It also has access to telemetry data and other reports on investigations etc. Breaks and leaks related to water mains (and chokes for sewer pipes) have not yet incorporated into the GIS system (MatMan) but Council plans to link this information in future to show it geographically.

Once the burst history is uploaded into MatMan it will then automatically load into GIS, this will allow more robust analysis of burst trends. Part of the Asset Management Improvement Program involves including Customer Complaints on works orders managed within MatMan. This will then be linked to GIS and hence will be able to be interrogated in conjunction with the burst history. It is envisaged that this data will be used to formulate criteria or triggers to signal the need for water mains replacements.

Project Delivery

After the mains renewal schemes have been identified in consultation with Operations, more detailed design work is conducted to estimate the cost of the projects more accurately than the initial use of the reference unit rates manual.

At project inception, the procurement strategy is managed by Asset Planning and reviewed with concerned parties of Council and it is developed to ensure efficient delivery of the project sat least cost with respect to:

- Bundling of schemes.
- Project Management cost sharing.

- Whether design is better undertaken internally or contracted out with construction.
- Potential to share the risk between Council and contractors.

Small renewal works are delivered using in-house day labour, otherwise projects in excess of $150K are usually contracted out through the Council Contracts Section by open tender.

Cost Summary

The capital expenditure required for the WMR program of works has been based on an assessment of water pipe asset age and an assumed percentage renewal over time. Council's actual and proposed expenditure profile from 2007 to 2013 is as follows:

Actual and Budgeted capex			**Forecast Capex**				**Total Actual and Budgeted**	**Total Forecast**
2006/07	**2007/08**	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2006/07 to 2008/09**	**2009/10 to 2012/13**
663	619	1,523	800	800	800	800	2,804	3,200

Assessment of Prudence

We believe that Council has proposed a water mains renewal program that is prudent and that the method of scheme selection, prioritisation and delivery is efficient for the relatively low level of renewals required. The method by which individual schemes are chosen and the procurement method used, is established and appears to be working well while the water network asset base is still relatively young.

We therefore do not recommend any particular efficiency target for the WMR program for Council for this Determination other than the overall efficiencies we have recommended for the forecast capital expenditure (Section 3.8)l.

We expect that, as the core Asset Management Framework and supporting systems are fully implemented and as Council moves towards an advanced Asset Management approach, improved asset data will inform the build-up and justification of the capital program; in particular the level of WMR proposed beyond 2012/13.

Project Title – *Toukley Effluent Re-use Scheme (W53)*

Brief Description of Project

The Toukley effluent re-use scheme was initially developed as a drought alleviation measure to conserve potable water and maintain council owned infrastructure, such as playing fields and ovals.

Following completion of the original scheme which was based on the 1992 NSW Guidelines, regulatory standards from DEUS were updated to reflect national guidance. This identified that an improvement in treated water quality was required. In addition to this, further recycled water customers were identified, increasing the demand o the current re-use plant.

The proposed scheme involves construction of a Dissolved Air Flotation and Filtration (DAFF) process unit with UV treatment and chlorination. Capacity of the re-use plant would increase from 3.6 Ml/d to 7.2 Ml/d.

Drivers for Investment

Whilst 'growth' is identified as the primary driver for investment, the Toukley Effluent Re-use Scheme has multiple drivers including:

- Changing regulatory standards has increased the required treated water quality (mandatory)
- Increased demand for a recycled water supply within the community (growth)
- Reduced demand on existing potable water supply (drought)
- Reduced risk of possible compliance failure and exceedance of volumetric discharge consent at Norah Head Outfall.

Solution Development

We were advised that in developing the preferred solution the following planning activities were undertaken:

- Identification of altered standards to meet national guidance
- Risk assessment on all re-use scheme
- Identification of project benefits and outcomes
- Cost Benefit analysis
- Procurement strategy identified and implemented

As a result of this we found that the preferred solution was developed by specialist tenderers via an expression of interest.

A number of alternatives were proposed to achieve the water quality objectives, including 'Densadeg Clarification', sand filtration and the selected DAFF process.

Project Delivery

Following the expression of interest, a design and construct tender was let to the successful tenderer.

We found that at the time of review, the contractor had completed the preliminary site works and process equipment had been ordered.

Work is forecast for completion by May 2009.

Cost Summary

A total contract value for the scheme has been agreed and the spend recorded to date appears reasonable against the progress made.

We noted though that the expenditure for the project is covered by two projects – W53 and W45 – the latter related to the upgrade of the plat to a DAFF treatment plant. Costs have therefore been included under project W45 in 2009 for the DAFF plant at Toukley STP. Future expenditure in 2010 and 2011 is for new tertiary treatment facilities at other STP's where effluent is recycled, to cater for upgraded standards and greater usage volumes. Additional costs included within the expenditure profile over and above those reported to us are included in the expenditure profile for project W53. These costs in years 2009 to 2011 are related to he extension of effluent lines to new sites from Toukley STP, (Slade Park, Halekulani Oval and Bowling Club, Budgewoi Soccer Club, Edgewater and Buff Point); from Bateau Bay STP to Eastern Road Oval; and from Gwandalan STP to Gwandalan Bowling Club.

Assessment of Prudence

Although the Toukley Effluent Re-use Plant was only constructed in 2005, changes in regulatory standards to ensure compliance with national guidelines meant the output from the original process was not of sufficient quality. We were advised that significant restrictions would need to be placed on the use of water from the original process that would be difficult to enforce.

This represents an unacceptable business risk to Council that may compromise public health. For this reason, we consider the investment to be prudent.

We confirm that Council has adopted a reasonable approach to the procurement of this work, and given the large number of existing customers utilising this water believe it represents good value for money.

Project Title – *Upgrade to Toukley STP inlet works (S108)*

Brief Description of Project

The Toukley Sewage Treatment works was built in the late 1960's and the associated inlet works are now in excess of 35 years old and have not been subject to any major modifications since built. Consequently, significant maintenance and serviceability need to be addressed relating to:

- Inefficient screens - the 24mm bar screens allow rag and grit to pass through to the treatment process and into the sludge, which limits the application of the sludge for further use. Substantial maintenance is required to ensure their operation, which is particularly difficult as the installed equipment is obsolete and requires expensive spares fabrication. Screens of 3mm/5mm would be more appropriate.
- Serious corrosion of both steel components and the concrete reinforcement was prevalent in some places.
- Screenings produced are wet and are therefore not conducive to keeping disposal costs at a minimum.
- Grit removal is in serious disrepair, requiring a high degree of manual intervention.
- Screenings/grit removal system was inefficient comprising of Otto bins requiring daily visits from Operators to ensure operation and disposal.
- Community standards have changed such that the potential for odour issues are higher risk now than when the STP was first built.

Drivers for Investment

This project falls under the Mandatory standards driver as is indicated in the Submission (SIR). This covers the four main issues relating to:

- Poor serviceability of the existing inlet works.
- Increased risk of odour issues due to a decreased tolerance of odour from the community since the STP was built.
- Increased OH&S standards since the inlet works was built.
- Provide digested sludge of a quality such that it can have a beneficial use.

A further [efficiency] benefit resulting from implementing the project is the decrease in screenings/grit disposal costs and minimising future digester maintenance costs.

Solution Development

Two main options were considered to bring the inlet works back up to standard:

- Refurbish and upgrade the existing inlet works.
- Demolish and replace the existing inlet works.

The options appraisal was conducted by the contracted procurement and project managers, the Department of Commerce, and the preferred option (to refurbish the inlet) was selected, thereby making best use of the existing civil structure at least cost but still achieving the project benefit(s). The outcomes of this process were peer reviewed by the Council.

The main components of the inlet refurbishment solution involve replacement of the screen with a 3mm step screen; refurbishment of the grit removal system; refurbish two of the concrete channels (concrete corrosion); upgrade of the conveyor system for screenings etc.; and inclusion of a soil bed filter to scrub air from the inlet channels to remove/reduce odour.

Project Delivery

Progress to date shows the project at the detailed design stage, having gone through an open tender process for detailed design, while a separate construction contract will also be open tendered afterwards to implement the preferred detailed design option.

Based on the project report provided from August 2008, the predicted completion of the project capital works is in December 2009 and we have been assured that the project will be completed by June 2010.

Cost Summary

At the project initiation stage, capital cost estimates were based on the concept design at +/-50% accuracy. Further cost refinement was achieved at the completion of the concept design stage (+/-25%). Following the review of the detailed design report, a project out-turn cost of $2.587M (nominal) was estimated. This is close to the estimated cost of $2.64M ($2008/09) estimated in the AIR/SIR for the 2008 submission.

We note that the price includes for a contingency of ~10% for any rectification issues arising at the handover from the final commissioning stage of the project.

The Monthly Report from August 2008 provided for the project was comprehensive in nature and showed that the detailed design stage was tracking well. We have already noted the cost change above, which will be reviewed by an independent quantity surveyor and require a Budget Amendment form to update the financial figures on the system. The current scheme cost within the Oracle

database for completion is $1.7M but this figure requires updating by Asset Planning to reflect the increased costs included for Project Management and Construction activities by the detailed designer.

Assessment of Prudence

We are of the opinion that this scheme is prudent and justifies the benefits to be achieved. It is possible however that the costs will increase further during the construction stage. We expect that cost increases can be minimised through tight project management which has seen an increased budget allowance for this activity to ensure that budgets remain controlled. The total out-turn cost realised should therefore fall within a theoretical maximum total of $3M.

Project Title – *Warnervale Water Quality A1 & B6 (R605)*

Brief Description of Project

This is a Section 94 (Developer Contributions) funded project that was identified under the District Contributions Plan (DCP) through study work conducted 10 years ago. The original concept and management considerations for the project identified 10 to 15 small projects to assist with remediation of Porters Creek wetland. From the original study, a smaller report was developed to assess the options in greater detail, of which Warnervale was one of the minor sites originally investigated on which to provide remedial action to protect the wetland.

Warnervale is a growth site in the Wyong Council area and related flooding issues are being addressed through other projects in addition to this one.

Drivers for Investment

Porters Creek is the largest wetland between Sydney and Newcastle and is regarded as an important environmental asset. As Warnervale is a growth site, environmental protection (through maintaining water quality) of such an important and sensitive wetland is necessary to ensure the continued environmental health of the area.

Solution Development

The area drainage flows from east to west in the Warnervale catchment. Options considered to prevent stormwater runoff from the new development at Warnervale into Porters Creek wetland included construction a large basin to the west of Warnervale or to construct a wetland to remove pollutant loads (phosphorous, litter and sediment/SS) – a choice between quantity versus quality. This latter option was considered viable and feasible on constructability/cost grounds compared to the large basin option designed to contain a large volume of stormwater.

The general concept involves the removal of phosphorous, litter and suspended solids by installing and establishing a reed bed in the constructed wetland which can polish the stormwater effluent. The stormwater will flow through the constructed wetland to the outlet and into the existing drainage lines discharging to Porters Creek wetland. Ultimately the overland flow ends up in the river after making its way through the wetland.

Water harvesting of peak flows is another potential offshoot/benefit from this scheme that is being investigated to offset demand for potable water supplies

through secondary uses. Two related projects are proposed, with the first of them looking into this:

- Porters Creek Stormwater Harvesting.
- Porters Creek Drainage.

The former scheme is to be funded by a Federal Government grant and will be designed to divert excess flows from the constructed wetlands built within this [Warnervale Water Quality A1 & B6] project.

The latter scheme is a JWS project will be funded with a combination of Section 94 Developer charges ($1.55M) and a Federal Grant ($2.6M). It is intended prevent runoff (supernatural flow) in the catchment from Warnervale Town centre and the Wyong Employment zone from entering the large (50km2) Porters Creek wetland.

Project Delivery

The constructed wetland option could be staged over 12 phases in line with the timing of the development and growth in Warnervale whereby the constructed wetlands and associated infrastructure can be implemented accordingly within the development footprint. There is no need to obtain planning approvals because the adopted design standards for the development have already been agreed and incorporated and hence this will not cause a project delay.

The project is currently at concept stage and has not undergone detailed design but will do so shortly.

It is envisaged that as the Warnervale development has already started, then works will commence shortly to allow the lead times necessary to put in place the constructed wetlands in step with or ahead of development stage completions. The delivery profile is anticipated to be rapid this financial year (2008/09) and ~$1.5M is expected to be spent implementing the project. There is the potential for some delays to occur due to weather conditions (rain as has been experienced more over the past 18 months) affecting site access. The time to obtain environmental approvals may also cause some delays to some stages of project completion.

Cost Summary

This project was originally estimated by consultants to cost $1M (eight years ago). Uplifting this figure and modifying the project to suit the current project scope gives a total spend of $1.5M in real terms. Some of the increases are due to the increase in tipping fees to landfill from $15/tonne to $50/tonne and increased engineering resource rates. We note that the unit rates used to give the project cost

of $2.8M are in line with a similar project (Bateau Bay) delivered in-house by Council approximately 2 years ago. The additional $1.4M will be spent on additional scope items required to alleviate flooding including culverts in Warnervale Road ($500K) and a collector road at Mataram Road, Warnevale ($800K) that inundates.

With respect to funding, Section 94 contributions when indexed to 2008/09 prices total ~$2.83M, which should cover the cost of the project.

Assessment of Prudence

We believe this scheme to be prudent and justifiable. The option chosen is both feasible and cost-effective, while project delivery can be staged to meet development construction rates over time. The technology chosen for use in this project has been proven and is environmentally sound.

The unit rates required to do the work are in line with previous work of a similar nature and developer contributions are expected to cover the capital works. As Council has undertaken similar work recently, we expect that he out-turn cost will be very close to that reported, at $2.8M.

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