

Expenditure Forecast Review for the Victorian Regional Urban Water Businesses

- CENTRAL HIGHLANDS WATER
Assessment of Expenditure Forecasts
- FINAL REPORT
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1. Introduction and Background

Sinclair Knight Merz has been engaged by the Essential Services Commission (ESC) to undertake an independent review of the expenditure forecasts provided by the following eleven Victorian regional urban water businesses as part of their Water Plan submissions for the 5 year regulatory period commencing 1 July 2008 and ending on 30 June 2013:

- Barwon Water;
- Central Highlands Water;
- Coliban Water;
- East Gippsland Water;
- Gippsland Water;
- Goulburn Valley Water;
- North East Water;
- South Gippsland Water;
- Wannon Water;
- Western Water;
- Westernport Water.

The key objectives of the reviews are to determine whether the capital and operating expenditure forecasts in the Water Plans are:

- Reasonable and prudent;
- Appropriate in relation to key drivers and obligations;
- Robust and justifiable (with adequate demonstrated supporting analysis and systems); and
- Deliverable over the 5 year regulatory period.

In undertaking these reviews, SKM's key responsibilities are to:

- Assess the appropriateness of the expenditure forecasts in relation to the key objectives of the review;
- Provide independent advice to the ESC regarding the appropriateness of the forecasts; and
- Where SKM's advice indicates that a proposed expenditure level is not appropriate, propose to the ESC a revised expenditure level.

The key outputs to be provided to the ESC in relation to these reviews are:

- Issues papers: 23 November 2007;
- Draft Reports (one report for each water business): 31 January 2008; and
- Final Report: 5 March 2008,
[or other date agreed with the ESC].

A draft report, presenting the review team's preliminary views on the proposed expenditure forecasts and the further work undertaken to clarify the issues identified in the Issues Paper, was submitted to the ESC for the various businesses between late January and mid February 2008. The Draft Report, including preliminary recommendations, was made available to the relevant regional urban water business for its review and feedback. Central Highlands Water provided a written response and a further meeting and discussions with the business were undertaken to clarify any remaining issues, to ensure any factual errors or misinterpretations were corrected and to help the review team formulate its final recommendations.

This Final Report, which constitutes the third key output of this review, presents final recommendations on adjustments to be made to the operating and capital expenditure forecasts from the review.

1.1 Report Outline

The following layout has been adopted for this Draft Report:

- **Section 2** briefly describes the approach taken for the expenditure forecast review;
- **Section 3** discusses the key general issues that arose, common to many if not all of the water businesses, that provided a key focus for further more detailed review;
- **Section 4** provides background on the process used by the review team to form its view on the expenditure forecasts and identifies some of the key issues faced by the water business driving expenditure during the second regulatory period;
- **Sections 5 and 6** respectively address the issues identified for Central Highlands Water's capital and operational expenditure forecasts, and contain recommendations as to adjustments to be made to the forecasts and capital contributions, as appropriate.

2. Approach to the Review

2.1 Assessment of Operating Expenditure

The key item in assessing operating expenditure is the evaluation of the additional operating costs relative to actual operating costs incurred in 2006/07. These additional costs were assessed and changes recommended in order to achieve a productivity improvement during the second regulatory period. This is discussed in **Section 2.1.1** below.

2.1.1 Evaluating Productivity Improvement

The ESC has recommended that a productivity gain of 1% per annum, growth adjusted, should be assumed. In instances where the forecast level of the OPEX that is controllable by the business does not exhibit the desired level of productivity gain and/or there are increases above the assumed productivity, clarifying explanations for this will be sought.

The procedure proposed to test the increase above appropriately growth adjusted Business As Usual (BAU) operating expenditure is as follows. For each year of the regulatory period:

- 1) Establish a **Growth Adjusted Target BAU Opex** (BAU refer below for it's determination),
- 2) Compare the water business' **Forecast Gross Opex** for that year (as identified in its Water Plan) with the Growth Adjusted Target BAU Opex;
- 3) Establish the "**Variance from Growth Adjusted Target BAU Opex**" [Item (2) less Item (1) above]; and,
- 4) If the "**Variance from Growth Adjusted Target BAU Opex**" is positive (i.e. the Growth Adjusted Target BAU Opex is less than the Forecast Gross Opex), seek an explanation of the activities and the related expenditure comprising this difference.

The Variance from Growth Adjusted Target BAU Opex is a starting point for discussions and SKM will be considering the make-up of the positive variances and the justification and reasonableness of them with the water business. There will potentially be a variety of explanations.

Further elaboration of this proposed procedure and determination of the above parameters is provided below:

- The **Growth Adjusted Target BAU Opex** (BAU = business as usual) for a particular year will be determined by taking the actual gross operating expenditure for the business for the most recently audited full year's operation (i.e. Actual Gross Opex in 2006/07), subtracting the expenditure for licence fees, purchases of bulk water and the environmental levy, adjusting the remaining expenditure upwards in proportion to the growth in customer numbers that has

occurred since 2006/07 and then reducing this amount by the ESC’s stipulated minimum productivity gain of 1% p.a. year on year.

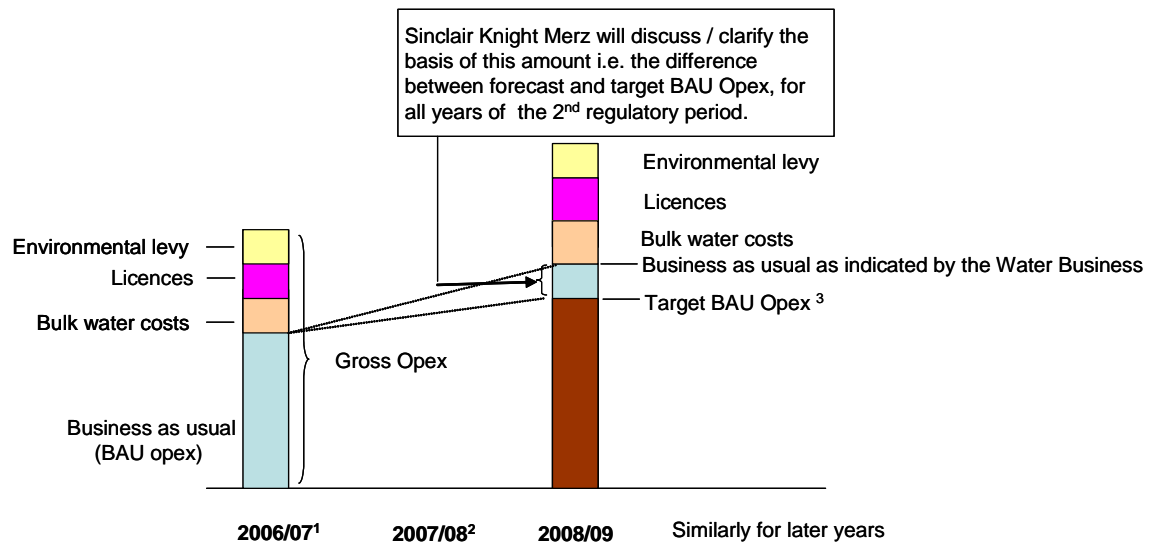
Thus the formula applied to establish the Growth Adjusted Target BAU Opex is:

■ $A = B * (C_{(year\ n)} / C_{(year\ 2006/07)}) * (1-0.01)^{(year\ n - 2006)}$ **Equation 1**

Where **A** is the Growth Adjusted Target BAU OPEX for year n;
B is the actual audited Gross Opex in year 2006/07 excluding costs for licence fees, environmental levy and water purchases.
C is the number of water supply customers (for the year indicated).

This is illustrated schematically in **Figure 1** below.

■ **Figure 1: Illustration of Growth Adjusted Target BAU Opex**



- Notes:**
1. 2006/07 was selected by the ESC as the base year because this is most recent year for which recorded data is available.
 2. 2007/08 is outside the 2nd regulatory period and will not be assessed in detail.
 3. Target BAU Opex is estimated from BAU Opex in 2006/07 allowing for growth in customer numbers and productivity gains of 1% per annum (cumulative).

2.1.2 Issues which the ESC will resolve

The ESC will review and resolve the amounts to be budgeted for Licence fees, Environmental Levy, and the tariffs applicable to bulk water purchases (if any). These issues thus fall outside the scope of SKM’s review.

It should be noted however that the forecast volumes of bulk water purchases fall within the scope of the SKM review. In so far as the assessment of bulk water purchases and the related expenditure impacts on Central Highlands Water's expenditure forecasts the review team has relied on the outcomes of the preliminary review of the demand forecasts undertaken by PWC.

2.1.3 Water Demand Forecasts

Information on the review of the demand forecasts undertaken by PWC for the ESC was made available to the SKM review team and was considered at least to the extent that the outcomes of that review were consistent with the demand forecasts influencing this expenditure review.

2.2 Assessment of Capital Expenditure

The process for reviewing capital expenditure forecasts is summarised below:

- A number of projects were selected, on a sample basis, but including any projects comprising a significant proportion of the total forecast capital expenditure;
- The selected projects were reviewed to confirm that the following criteria would be met:
 - **Appropriate in relation to key drivers and obligations** - with evidence provided of such drivers and in accordance with the Statement of Obligations that sets out the responsibilities of each of the Water Business;
 - **Robust (with adequate demonstrated supporting analysis and systems)** - as may be demonstrated by a report which clearly enunciates the problem faced by the water business, and sets out the analysis undertaken of the options to resolve that problem and identifies the preferred solution. Evidence may also be sought to demonstrate that the preferred solution falls within the overall strategy adopted by the water business.
 - **Deliverable over the 5 year regulatory period.** Usually evidenced by a Gantt chart, or similar detailed program, demonstrating that the key activities comprising the delivery of the project from planning to construction have been identified and thought through, and assigned an appropriate sequence and duration.
- **Reasonable Cost Estimate.** The cost estimate is well supported either by a schedule of quantities using typical rates currently being experienced in the industry, or compare favourably with other similar projects or preferably both of the above.

3. General Issues

3.1 Issues Identified for Capital Expenditure

3.1.1 Pressure on Resource Availability

Expenditure on capital works in the Victorian water industry, based on data provided by all (metropolitan and regional) the water businesses in Victoria is expected to increase dramatically as shown in **Table 3-1**.

- **Table 3-1: Historical and Forecast Total Capital Expenditure in the Victorian Water Industry**

	1 st regulatory period			2 nd regulatory period			
Year	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Expenditure (\$M / year)	950	1,680	2,800	3,220	2,150	1,000	820

The aggregate capital expenditure levels for the Victorian water industry are forecast to increase steeply from current capital expenditure levels in the first three years of the second regulatory period and then decrease but remain high for the final two years of the regulatory period. This is expected to place great pressure on available resources - in the water businesses themselves, the consulting sector and the contractors, especially in the first three years of the second regulatory period (RP2). Although this pressure may be mitigated somewhat as some of the large projects, such as the proposed Sugarloaf Pipeline for Melbourne, may not consume such large amounts of resources as the costs of those projects alone may indicate, the pressure is nevertheless expected to be severe. Furthermore, it will be exacerbated by high to very high workload levels in other infrastructure areas such as transport and in the mining sector. A positive aspect is the constructor resources coming off some of the big road projects currently nearing completion (e.g. Eastlink).

The limitations on pipeline supply, particularly steel pipeline, is a particular constraint facing the industry at present requiring businesses to place orders early or face price premiums for accelerated delivery.

In considering project deliverability and in reviewing the expenditure forecasts therefore the review team has considered the urgency of projects whose expenditure is forecast for the first three years of the second regulatory period and in some cases spread this expenditure and/or reassigned the expenditure to later years.

3.1.2 Country Towns Water and Sewerage Program

The Country Towns Water Supply and Sewerage Program is a program managed by the Department of Sustainability and Environment in which the Government of Victoria will invest amounts as follows totalling \$42 million (including some overlap between categories).

- \$21 million in water and sewerage services for priority towns with the most urgent health and environment issues.
- \$12 million on towns in the Gippsland Lakes area;
- \$6 million on "showcase" towns that will develop innovative solutions that other towns can learn from;
- \$4 million in upgrading water supply in towns with the most urgent problems; and
- \$3 million in helping councils to prepare domestic wastewater management plans.

In January 2006 the Victorian Government announced the 35 priority country towns which would receive sewerage systems (23 towns) and /or improved water supplies (14 towns). The media announcement of January 9, 2006 states that the "statewide program aims to stop leaking septic tanks polluting rivers, groundwater and other waterways and damaging the environment".

While the obligation to undertake these works, comprising the media announcement concerning the sewerage schemes in the Gippsland Lakes region and "priority towns" is understood, the review team is not aware of any specifications concerning timing associated with this obligation.

The review team recommends that the ESC should seek stronger guidance from DSE and the government on the priority, business decision framework/rules and funding arrangements in the light of current market conditions (and project costs) for these proposed schemes.

In terms of the business case for these projects the review team is not in a position to form a firm view on the business / financial merits of proceeding with these schemes. We understand however that implementing these schemes requires cross subsidy from existing customers. Our general recommendation therefore is to defer the regulatory expenditure concerned so as to minimise the adverse impact on customers and reduce the impact on water price increases.

3.2 Issues identified in relation to Opex forecasts

The preliminary reviews of the Water Plans and the operational expenditure forecasts focussed particularly on items brought forward by the businesses to explain the Variance from Target BAU Opex. Effectively this comprised a list of activities where the costs are for new obligations, operating new infrastructure or increased costs for existing activities. In this way the major issues for each business were identified and formed the basis of the reviews producing the outcomes as outlined in **Section 6** of this report. In addition the following key issues were identified that required consideration in relation to some or all of the businesses.

3.2.1 Energy (Electricity)

3.2.1.1 Overview

Most water businesses have proposed **additional energy costs** throughout the regulatory period as a factor contributing to the explanation of the variance in BAU Opex. The following considers some of the issues relevant to this increased expenditure.

For a number of businesses, the current energy contracts with electricity suppliers were due to expire and be renewed with effect from around July 2008. In most cases the new agreements or contracts to cover the period beyond 1 July 2008 have not been executed. Consequently new tariffs were not yet established at the time of the Water Plan submission and the expectation was that significant increases throughout the regulatory period would occur.

The cost of electricity in 2006/07 generally ranged from about 5 to 13% of the total operational expenditure for regional urban water businesses in Victoria.

The water businesses, based on broad information provided to them from various sources in mid to late 2007, have in their Water Plans submitted variously put forward real increases in electricity costs over the second regulatory period ranging from

- No or minimal provision for real electricity cost increases relative to 2006/07 excluding new demands (e.g. Goulburn Valley Water, Central Highlands Water), to
- Substantial real electricity cost increases of up to 100% relative to 2006/07 (e.g. Barwon Water, Wannon Water). Such cost increases were a combination of predominantly price effects but also demand effects and other relevant impacting assumptions.

The review team notes that prices in the electricity market (and specifically the wholesale market) have moved considerably since the submission of the Water Plans and continues to have some volatility. However it is clear that the electricity prices have fallen considerably and reconsideration by the water businesses of this issue is appropriate.

The review team also notes that the current electricity contracts were for a three period and the negotiations for these were undertaken in circa early 2005 with effective operation from 1 July 2005. The base year of 2006/07 sits in the middle of the contract period.

In response to the Draft Report most businesses took further advice on the potential real increases in electricity costs. Notably, following provision of the Draft Reports to the respective water businesses, North East Water and Central Highlands Water provided the review team with copies of advice they had received from independent specialists in this area (Key Energy & Resources and Marsden Jacobs respectively). One business is well advanced in obtaining firm electricity prices for the next three years.

Based on circumstances prevailing at late February early March, this advice generally proposed that a likely outcome on real electricity prices (and therefore costs) over the regulatory period would be a flat increase of some 19 to 24 % overall (with the wholesale cost component being the primary influencer of this). [NB: It needs to be confirmed that there are no nominal (versus real) effects to be resolved.]

In summary, and as detailed in the rest of this section, the review team considered that these views took a slightly “pessimistic” or cautious view of the likely outcomes of electricity price increases to be negotiated by the water businesses before 30 June 2008. The methodology used by these advisers is broadly consistent with the strategic overview approach adopted by the review team in assessing likely electricity price outcomes.

The review team has concluded and recommends that the following increases in electricity energy prices should be adopted for regulatory expenditure purposes:

- 2008/09 12% (*relative to costs incurred in the base year, 2006/07*)
- 2009/10 onwards 15% (*relative to costs incurred in the base year, 2006/07*).

The review team notes the differences of views that the water businesses have on real electricity price increases (and their cost impacts). As is natural the water businesses have been cautious from a business management viewpoint in formulating their positions and it is expected that this would be moderated when viewed from a regulatory pricing position and the extent to which such costs should be incorporated into a reset regulatory “BAU” expenditure base. These differences will only be resolved when the water businesses enter into and conclude their respective negotiations with electricity providers. The review team notes that most businesses intend to adopt a similar approach as for the current contracts and use the Strategic Purchasing Unit to negotiate prices.

The review team recommends that the ESC revisit this issue following release of its Draft Pricing Determination and in moving to its final determination. This is prudent because this decision (given its significant impacts) needs to be made with the best and contemporaneous information when making its final determination and the water businesses should be well advanced in its negotiations for new electricity contracts that all will need to be entered into before 30 June 2008.

The review team has formed its views on real electricity price increases (underpinning cost impacts) using the approach described in the remainder of this section.

3.2.1.2 Proposed Increase in Energy Tariffs:

The components of the delivered cost of electricity (which are separated into peak and off-peak components for larger users) are:

- Wholesale forward price

- Profile cost (represents the extent to which the actual load shape is correlated to the NEM pool price over a day/week/month etc)
- Losses adjustment (for transmission losses (MLF) and distribution losses (DLF))
- Transmission Use Of System costs (TUOS)
- Distribution Use of System Costs (DUOS)
- NEMMCO (National Electricity Market Management Company) fees
- Ancillary services charges
- MRET (mandatory renewable energy target) costs
- VRET (Victorian renewable energy target) costs
- Retailer's margin.

The *transmission cost* and the *distribution cost* are the other major components of the delivered cost of electricity, and together with the *wholesale forward price* make up between **80 to 90 %** of the total energy price.

Transmission Use of System costs (**TUOS**) and Distribution Use of System Costs (**DUOS**) are both regulated costs and represent approximately **40 to 50%** of the overall energy price. These cost components of the total energy price are generally constant (i.e. are increasing at CPI) or are declining in real terms. [NB: This is different from 'standing offer customers' where real increases in TUOS and DUOS of up to 17% have been recently experienced.]

Of the balance of the components of the total energy price:

- The retail, which are negotiable, and other costs make up approximately 5 to 13% of the total energy price.
- MRET and VRET charges were minor in 2002 but are rising to become a more significant cost element as these programs transition up to full effect.
- Many of the other charges rise consequentially because they are often determined as a percentage of the other charges (e.g. margins, losses etc).

Impacts of Carbon Trading Scheme

From sometime in 2010 to 2012 a carbon trading scheme is expected to be implemented in Australia which will have a material impact on electricity prices but that impact cannot be estimated until the design of the scheme (notably the "glide-path" for emissions reductions) is known (expected to be known in 2009 or 2010). The review team has not considered the impacts of this increase here and have assumed that any material price impacts would be reviewed by the ESC later and, if appropriate, adjustments made.

Future Price Movements (Aggregate level)

The **wholesale forward price** has risen considerably recently. Some of the drivers for this are seen to be the tightening of the supply/demand balance and the drought (which impacts on the ability of some generators to operate). However the futures market sees the wholesale forward price declining. The **wholesale forward price** is the principle variable component of the cost of electricity and currently makes up approximately **40 to 50%** of the total energy cost.

The wholesale forward price of electricity may be obtained from the Futures Market. Although prices are volatile on this market it reflects current market perceptions of the future wholesale forward price. **Table 3.2** provides a market view of wholesale forward prices for Victoria at January 2008 (Draft Report stage), adjusted to real January 2007 prices by assuming a CPI of 2.5%, and averaged to cover financial rather than calendar years. The increase with respect to 2006/07 has then been calculated.

- **Table 3-2: Victorian Electricity Futures - Wholesale Forward Price only (Draft Report Stage, January 2008)**

Calendar year	Forward unit cost for calendar year (\$/MWh – real Jan 07)	Financial year starting	Forward unit cost for financial year	% REAL increase in wholesale forward price - relative to 2006/07
2006	41.89			
2007	43.13	July '06	42.51	
2008	59.54	July '07	51.34	21%
2009	45.95	July '08	52.75	24%
2010	43.52	July '09	47.73	5%

The market is anticipating that current steep prices will decline in future and this is already reflected in Queensland (see Financial Review article in Appendix A) where drought breaking rains have occurred. There had been further movements in prices by the time of commencing preparation of the Final Report (from those at the Draft Report stage).

In forming its views the review team has been primarily informed by the information in the following:

- **Table 3-3** – which provides a view of the wholesale forward prices now (flat contract forward in nominal \$/MWhr as at 4 March, the date of commencing preparation of the review team’s Final Reports on the expenditure reviews) and which will provide a backdrop to the current electricity price negotiations of the water businesses; and
- **Table 3-4** – which provides an indicative view of the wholesale forward prices in late 2004/early 2005 (flat contract forward in nominal \$/MWhr) and which provided a backdrop to

price negotiations at the time of entering into the current electricity contracts. [NB: The market appeared to be reasonably stable at that time.]

■ **Table 3-3: Wholesale Prices - Flat Contract forward as at 4 March 2008**

Wholesale Prices - Flat Contract forward as at 4 March 2008 (in nominal \$/MWhr)			
State	Calendar Year		
	2008	2009	2010
NSW	40.26	46.51	52.87
Vic	42.09	45.6	51.22
QLD	50.2	44.87	47.03
SA	69.8	60.51	50.03

■ **Table 3-4: Wholesale Prices - Flat Contract Forward circa 2005 contract negotiations**

Wholesale Prices - Flat Contract Forward circa 2005 contract negotiations (in Nominal \$/MWhr)				
State	Calendar Year			
	2005	2006	2007	2008
NSW	35.5	36.5	37	38
Vic	33	34	34.5	35.5
QLD	33	35	35.3	36
SA	39	41	41	42

3.2.1.3 Overall Approach:

In forming its view the review team has adopted the following overall approach:

- Establish from **Table 3-3** the “average” Victorian wholesale electricity price (flat forward contract) for the period of the current contract based on the generally prevailing market view of prices at the time of the negotiations for the current contract. This is assumed to be the average of the 2006 and 2007 calendar year prices, namely \$34.3/MWhr. Fortuitously this also happens to be the base year for the current expenditure review.
- Escalate this price to current day dollars (assuming only 2.5% p.a. escalation). This yields a price for comparison with current view of 2008/09 prices of \$36/MWhr.

- Compare this with the 2008/09 (average of calendar prices for 2008 and 2009 from **Table 3-4**, namely \$43.9/MWhr). This yields an effective real increase in this wholesale price of 22% for 2008/09 relative to 2006/07.
- This can be repeated for other years. For 2009/10 the point of comparison is with the conversion of the average 2009 and 2010 calendar year prices de-escalated to give comparison in real terms. This yields an effective real increase in this wholesale price of 30% for 2009/10 relative to 2006/07.
- Assume that the real increase for 2009/10 (relative to 2006/07) also applies for the later years of the regulatory period.
- Input these real wholesale price increases into a spreadsheet assessment for the real overall price increases taking into account all components of the price as indicated in **Section 3.1.2** and their real movements, noting that the wholesale price component is the most volatile and represents approximately 40 to 50% of the overall price.

[NB: The real cost increases are relative to 2006/07, not year on year cumulative. Choosing other states and/or a mix of states may give rise to a lower percentage increase, noting that this is a national market. The forward prices also probably include a higher escalation factor than has been assumed by the review team].

For any water businesses demonstrating completed contracts with electricity suppliers covering the second regulatory period the forecast expenditure for energy purchases was based on the tariffs contained in that contract. The review team also understands that contracts being entered into currently appear to be for a three year period.

Recommendations: The review team recommends, based on the above approach, that the following increases in energy prices should be adopted for regulatory expenditure purposes:

- 2008/09 12% (*relative to costs incurred in the base year, 2006/07*)
- 2009/10 onwards 15% (*relative to costs incurred in the base year, 2006/07*).

In making these recommendations the review team also:

- Notes that the above price increases in each year are not cumulative year on year but relative to 2006/07;
- Notes that these increases do not include changes in demands (as these are dealt with separately for the respective businesses; and they do not include any future impact of carbon trading on future prices.
- Recommends that the ESC review the real electricity price increases expected on the basis of any further and better information available during the period following release of its Draft Pricing Determination and before the final determination.



The review team has applied these real increases in electricity costs consistently across all the water businesses.

3.2.2 Green Energy

The ESC indicated in its' Water Plan Issues Paper (December 2007) that many water authorities had forecast increases in operating expenditure due to implementing greenhouse gas (GHG) management strategies. Water authorities provided a number of reasons for implementing such strategies, including EPA requirements for licensed premises, statement of obligations requirements to develop greenhouse gas reduction strategies and the results of customer consultation which indicated that customers were willing to pay for (or contribute towards) carbon neutrality.

No water authority cited any requirement that set specific targets it was compelled to achieve. Within the regulatory period, reduction targets ranged between 0 percent and 30 percent, with some large new projects such as the Goldfields Superpipe targeting GHG neutrality (as mandated by government for that project).

The review team considered that GHG targets of the businesses should typically be in the range 10 to 15% (for the assessment of expenditure for regulatory pricing purposes). This is understood to be broadly consistent with government expectations at this stage.

The EPA outlines four broad categories of carbon offsets (EPA web site) including, bio-sequestration (e.g. tree planting), energy efficiency, renewable energy and greenhouse gas avoidance, capture and destruction projects. Water authorities who propose to reduce their greenhouse gas emissions and set themselves specific targets propose to undertake a range of activities that fit into these categories. The majority of authorities are proposing to review the energy efficiency of their assets in preference to buying green energy or carbon offsets. Some water authorities propose to buy green energy and carbon offsets.

The price of green energy and carbon offsets can depend on the "quality" of the energy/offset being offered. Some carbon offsets offered by the market are not accredited and even those that are accredited can be of varying "quality". A report produced by RMIT Global Sustainability, "Carbon Offset Providers in Australia 2007" compares products offered by 15 different carbon offset providers. The report found there is a significant difference in price charged per tonne of offset, with tree planting focussed providers charging approximately \$9 to \$13 per tonne of CO₂ offset and renewable energy oriented providers charging between \$20 and \$40 per tonne of CO₂ offset.

The review of greenhouse gas reduction strategies considered the process that water authorities went through to set targets, strategies and budgets. Budgets which resulted in an effective price per tonne of carbon offset consistent with the RMIT report were considered reasonable.

For the purposes of this assessment the review team considers that an appropriate reasonable benchmark cost for carbon offsets is \$20 per tonne of CO₂. It is acknowledged that the market is relatively immature and future prices may fluctuate.

3.2.3 Labour and staff costs

“EBA” real increases: Real increases (i.e. increases in excess of CPI) in overall employment costs were not generally considered as contributing to extraordinary growth in operational costs as they should be offset by improvements in productivity. Thus it could be argued that increased salary costs negotiated in enterprise bargaining agreements (EBA’s) above CPI do not form part of the Variance to BAU Opex.

It is acknowledged that high levels of employment nationally may serve to drive up labour costs particularly in areas of skills shortage. In current conditions it is expected that professional technical specialists would be expected to command higher percentage increases than the average, while others lower.

The review team notes the government’s directive to its businesses that labour cost increases should be contained to approximately 3.25% per annum in nominal terms.

In summary, for this review labour cost increases of CPI + 1.25% were considered as reasonable. Increases above this are assumed to be absorbed in productivity offsets and not form the basis of increased operating expenditure above the Target BAU Opex. The allowance for a real increase of 1.25% p.a. (cumulative) on base labour costs was applied consistently across all water businesses.

The real labour cost increases of 1.25% p.a. (above CPI) are the only component of labour cost increases (fixed number of personnel) which are considered justifiable in terms of explaining the Variance from Target BAU Opex. The CPI increase does not represent a real cost increase and labour cost increases greater than 1.25% p.a. real are expected to have offsetting productivity gains - and neither have been passed through as justifying explanations of the Variance from Target BAU Opex.

New personnel resources: Costs for additional new operators of facilities completed after the base year (2006/07), or staff employed to meet new obligations imposed through the Statement of Obligations were however included, where appropriately justified.

Band increments: The review team notes that businesses have an obligation to pay band increments (and other) entitlements under appropriate arrangements. However in the context of this review for regulatory pricing purposes, such amounts are not an explanation of Variance from Target BAU Opex. Thus in this assessment such amounts are expected to be funded from productivity improvements and/or already accommodated in the adjustment of Target BAU Opex

through the growth rate adjustment and/or are already in the Base BAU Opex at a reasonable amount.

3.2.4 Labour on-costs

In addition to the direct salary costs for additional staff, and where appropriately justified, the on-costs of employment such as for superannuation contributions (9%), payroll tax (5.05%) and workers compensation (2%) and other items totalling approximately 19% were included in the costs allowed for additional staff. Overhead costs such as for accommodation were not regarded by the review team as contributing to the increased operating expenditure above the Target BAU Opex.

3.2.5 Limit of Materiality

In explaining the variance from Target BAU Opex a number of businesses included numerous items amounting to less than 0.2% of gross operating expenditure. The review team considers that such items would be part of the normal “swings and roundabouts” of variations in operating expenditure from year to year. Such costs are either not material and/or are covered by the allowance for growth (in setting the Target BAU and establishing the Variance from target BAU Opex) and/or are in the base year and/or a part of the “swings and roundabouts” of expenditure which occur from year to year where activities come and drop off.

These have generally not been considered or as justified for inclusion as part of the explanation of the Variance from Target BAU Opex over the regulatory period, unless very clearly identifiable as being related to new infrastructure or new obligations.

3.2.6 Demand forecasts

The forecast water demands submitted as part of the Water Plans have been reviewed on a preliminary basis by PWC. The impact of the preliminary review has been considered in the preparation of this Final Report (see **Section 4.1**).

3.2.7 Adjustments Principles

Two key principles were applied in establishing any adjustments to be made to *operating expenditure*:

- Any expenditure that was clearly not accepted or required adjustment (up or down) was included directly as an expenditure adjustment item in the Operating Expenditure Adjustments Table (**Section 6.3**) [e.g. any real increases in the businesses Water Plan electricity expenditure in excess of the electricity costs (price effects) determined as indicated in **Section 3.2.1**].
- The total of any adjustments should not result in an actual recommended regulatory operating expenditure in any year less than the Target BAU Opex. established as indicated in **Section 2**.

4. Central Highlands Water Overview

The approach to the review of the Water Plan expenditure forecast for Central Highlands Water has been as follows:

- Identification of the key issues through the preliminary review of the Water Plan and associated information templates (submitted to the ESC in October 2007). Information on the key issues was summarised in a memorandum communicated to Central Highlands Water by the review team on 29 November 2007 (File Note titled “Water Plan – Operating and Capital Expenditure Review: Central Highlands Water”);
- Further more detailed examination and investigation of the key issues through:
 - A meeting and discussion of the expenditure forecasts and key issues with relevant Central Highlands Water personnel on 5 December 2007.
 - Further responses and the provision of further information by Central Highlands Water on in response to queries arising out of the meeting on 5 December 2007.
 - Various discussions and e-mail correspondence with the designated Central Highlands Water contact.
- Feedback received from Central Highlands Water on the preliminary recommendations outlined in the Draft Report dated 15 February 2008 and further discussions with Central Highlands Water to clarify any remaining issues through:
 - Central Highlands Water’s written response to the Draft Report preliminary findings and recommendations (letter dated 11 March 2008).
 - A meeting and further discussion of the expenditure forecasts and key issues with relevant Central Highlands Water personnel on 5 March 2008;
 - Further responses and the provision of additional information by Central Highlands Water in response to queries arising out of and discussions at the meeting on 5 March 2008 and afterwards.

4.1 Key Issues

Some of the key issues in relation to Central Highlands Water’s expenditure forecasts are:

- The estimated average annual price increase for tariffs in Central Highlands Water’s region, based on the CAPEX and OPEX forecasts submitted by Central Highlands Water is 11.27%. This estimate closely matches the estimate of 11.4% (standard regulatory model) shown in Central Highlands Water’s Water Plan (page 6). This price increase is at the high end of the spectrum of price increases being sought by regional urban water businesses.

- The average annual price increase contained in the ESC's Final Decision (ESC, 2005) following the review of Water Plans for the first regulatory period from 2005/06 to 2007/08 was 4.8%;
- The region served by Central Highlands Water experienced unprecedented drought conditions leading up to and during the first regulatory period. This drought is not yet broken. Substantial investment is planned to import water to the Ballarat region and the Goldfields Superpipe pipeline project with estimated total cost of \$142M is under construction. This project is scheduled for completion in 2009.
- Central Highlands Water has adopted targets related to sustainability including:
 - 23% level of water recycling by 2012/2013;
 - 25% reduction in per capita water use by 2015, increasing to 30% in 2020 as prescribed in government's *Central Region Sustainable Water Strategy*.
 - No specific targets have been set for greenhouse gas abatement or renewable energy and no investment is planned in this regard during the 2nd regulatory period;
 - Central Highlands Water Plan to assess the need to recycle biosolids and notes that current stockpiles are not significant.
- The preliminary review of the water demand forecasts undertaken by PWC as part of the Water Plan review does not indicate any issues that would impact on the expenditure forecasts, other than that the appropriate growth rate to be used for the regulatory period is 1.6% p.a.

5. Capital Expenditure (Capex)

Table 5-1 shows Central Highlands Water's forecast capital expenditure by cost driver and by asset category. This table is as per the Water Plan submission.

■ Table 5-1: Capital Expenditure by Driver and Asset Category

Expenditure in \$ millions real (1/1/07)	FIRST REG PERIOD			SECOND REG PERIOD				
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Capital Expenditure								
Gross capital expenditure	14.98	71.62	179.61	53.55	25.46	22.16	20.88	18.27
Gross capex - business as usual	14.98	71.62	179.61	53.55	25.46	22.16	20.88	18.27
Gross capex - new obligations				-	-	-	-	-
Approved 1st period gross capital expenditure	19.90	43.69	24.09					
Average annual 1st period capex		88.74						
Average annual 2nd period capex		28.06		Annual 2nd period capex is on average 68% lower than the 1st period				
Breakdown of business as usual gross capex								
Water headworks	2.04	36.23	140.15	16.13	1.44	3.40	2.14	3.04
Water pipelines / network	3.82	4.00	4.53	4.21	3.98	4.87	3.86	6.89
Water treatment	0.88	0.87	5.38	4.08	1.95	0.29	0.11	0.27
Water Corporate	1.54	1.00	0.96	2.44	1.91	2.01	1.96	1.97
Water sub-total	8.28	42.10	151.02	26.85	9.28	10.57	8.06	12.18
Sewerage pipelines / network	1.85	2.70	1.00	3.01	5.73	4.75	8.20	3.67
Sewerage treatment	1.52	23.46	22.17	19.75	8.29	4.78	1.66	0.45
Sewerage Corporate	1.54	1.00	0.96	2.44	1.91	2.01	1.96	1.97
Sewerage sub-total	4.91	27.16	24.13	25.20	15.93	11.54	11.81	6.09
Bulk Water sub-total	-	-	-	-	-	-	-	-
Recycled water	1.78	2.37	4.46	1.50	0.25	0.05	1.00	-
Rural Water	-	-	-	-	-	-	-	-
Breakdown of BAU gross capex by cost driver								
Renewals				7.80	7.96	9.23	8.85	10.50
Growth				24.70	1.87	2.53	0.84	0.64
Improved service				1.14	1.87	0.75	0.70	0.61
Compliance				17.85	11.87	8.11	9.03	5.05
Government contributions				0.04	0.04	0.04	0.04	0.04
Customer contributions				1.93	1.79	1.41	1.42	1.44

Some of the features noted from the above table are:

- The high level of expenditure in year 2008/09;
- Apart from the peak for growth (water and sewerage in 2008/09), aggregate capital expenditure for the second regulatory period largely comprises *renewals* (32%) and *compliance works* (37%).

5.1 Deliverability of the Capex Program

It is noted in respect of capital delivery performance that:

- The average annual capital expenditure across Central Highlands Water's Water Plan for the second regulatory period is planned to be \$28.1M. This compares with actual annual average delivery of \$43.3M over the first two years of the Current Water Plan with a significantly higher capital spend of approximately \$180M planned in 2007/08 predominantly on the Goldfields Superpipe. This would result in an average over the three years of the first regulatory period of \$89M p.a.
- Overall the proposed size of the capital program appears consistent with what has previously been delivered by Central Highlands Water (even excluding the Goldfields Superpipe).

Central Highlands Water is aware of the high levels of capital expenditure forecast in the Victorian water industry and the pressure that this will place on available resources. Central Highlands Water considers that overall the risk associated with the delivery of the next water plan will be moderately higher than the Current Water Plan as:

- It has an arrangement with a large, well resourced, consultant to provide design services on an exclusive basis. In terms of this arrangement Central Highlands Water is in a strong position to demand high levels of service and timely project delivery. This arrangement has been in place for approximately two years and has worked effectively to date;
- Restructuring of internal management arrangements to enhance project delivery including the establishment of separate teams to deliver key projects such as the Superpipe, Ballarat North WWTP upgrade and Country Towns projects;
- Strategic packaging of contracts to suit local contractors or to attract larger externally based contractors. For example it is planned that the Country Towns projects for sewer and water respectively be bundled.
- Use of expressions of interest in key projects to establish the level of interest well in advance of the formal tendering process;
- A panel of contractor service providers has been established involving three year contracts (or three years plus two renewable) with prices locked in for that period;
- It has strong internal processes which drive timely project delivery. These include a Capex Working Group which meets at least monthly (every 3 to 4 weeks).

Central Highlands Water does not believe that it can smooth its capital profile and reduce the expenditure in 2008/09 because the lumpiness in the existing capital expenditure profile is primarily due to two committed projects – the Goldfields Superpipe (which is already well advanced in the construction phase) and the Ballarat North / Creswick WWTP upgrades.

The review team considers that Central Highlands Water's program is well within its capacity to deliver (based on past performance) and Central Highlands Water has a realistic view of the current delivery risks and has adequately responded to those, has adopted prudent delivery risk mitigation strategies and has generally provided for these risks in the delivery programs for specific projects. Central Highlands Water is reasonably well positioned (e.g. planning, functional design, etc) with respect to many of its key projects planned for delivery early in the second regulatory period.

The review team's initial assessment of the deliverability of specific projects is discussed below.

5.2 Key Projects

Central Highlands Water's Water Plan forecasts \$140.32M of capital expenditure over the regulatory period. The fourteen projects listed in **Table 5-2** make up \$97.85M (approximately 70%) of this.

■ **Table 5-2: Key Projects – Central Highlands Water Capital Program**

Capital Expenditure - in \$'000 real (1/1/07)	1st period	SECOND REG PERIOD					Total	% of total Capex	3rd period
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13			2013-14
Key projects									
1 Ballarat Sewer System Upgrade	470	1,558	2,440	3,890	5,540	2,972	16,400	12%	200
2 Country Town Sewerage Schemes									
Blackwood Sewerage Scheme	50	3,900	3,000	-	-	-	6,900	5%	-
Gordon Sewerage Scheme	50	2,000	1,900	-	-	-	3,900	3%	-
Waubra Sewerage Scheme	2,950	2,000	-	-	-	-	2,000	1%	-
Smythesdale Sewerage Scheme	2,050	1,900	-	-	-	-	1,900	1%	-
3 Goldfields Superpipe - Ballarat Link	131,928	13,800	-	-	-	-	13,800	10%	-
4 Plant and vehicle replacements	980	1,111	2,265	2,185	2,735	2,185	10,481	7%	-
5 Ballarat North & Creswick WWTP upgrades	18,715	9,106	600	-	-	-	9,706	7%	-
6 Water main replacements	1,496	1,307	1,438	1,260	1,260	1,260	6,525	5%	2,160
7 Dam safety improvement program	24	690	865	1,605	1,712	880	5,752	4%	2,162
8 Ballarat South WWTP improvements		205	665	2,085	1,375	375	4,705	3%	1,779
9 Beaufort WWTP upgrade & reuse	100	500	1,000	2,500	300	-	4,300	3%	
10 Raw water pipeline improvements	-	-	-	-	200	3,127	3,327	2%	2,118
11 Country Town Water Upgrade Schemes									
Avoca Water Supply Upgrade	2,000	2,000	900	-	-	-	2,900	2%	
Landsborough Water Supply Upgrade	3,013	-	-	-	-	-	-	0%	
12 Sewer main replacements	200	150	1,000	-	1,000	-	2,150	2%	
13 Daylesford sewer system upgrade	20	220	1,121	199	60	-	1,600	1%	
14 Recycled Water Ballarat (Lake Wendouree)	2,500	1,500					1,500	1%	
Total		41,947	17,194	13,724	14,182	10,799	97,846	70%	
% of total Capex in the financial year indicated		78%	68%	62%	68%	59%			

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A brief review of the prudence, reasonableness and deliverability of the forecast expenditure for the projects listed in **Table 5-2** follows. The review team has given priority to the highest ten ranked projects (on capital expenditure during the second regulatory period basis) for detailed review.

The review team has had some difficulty in undertaking these capital expenditure assessments with extended discussions and communication with Central Highlands Water necessary to clearly identify for many of the projects (at a sufficient level of detail) the following:

- A clear project definition, i.e. a clear specification of the project components to be delivered;
- A clear statement of the project objectives, i.e. the project driver(s);
- Information supporting the analysis of options and the selection of the solution adopted;
- Information linking the project components to the cost estimates and the expenditure forecast contained in the Water Plan;
- Information demonstrating that the cost estimate is reasonable;
- The project program illustrating project deliverability in that it demonstrates that adequate time has been allowed for the planning, design, approval, tendering and construction phases of the program. This program should also correspond to the profile of the expenditure forecast.

The Draft Report noted the longer than expected time to assess the capital expenditure for the projects indicated in **Table 5-2**. Further information was provided by Central Highlands Water which largely, but did not wholly, resolve the information gaps for aspects of projects as above.

5.2.1 Ballarat Sewer System Upgrade (\$16.4 million)

This project involves the upgrading of the main outfall sewer leading to the Ballarat South Wastewater Treatment Plant, one of the two major WWTPs serving Ballarat. The existing main outfall sewer was constructed in the 1920's and is in need of upgrading primarily on account of hydraulic deficiencies under wet weather conditions, and to provide for future growth. Modelling and experience has demonstrated the lack of capacity in 1 and 5 year storm events and in addition spills may occur in dry weather conditions. Condition assessments indicate that the sewers are generally at a criticality rating of 'A' inferring the need for annual inspections and rehabilitation within 1 to 4 years or 'B' (three yearly inspections, 5 – 10 year rehabilitation horizon).

At the time of the initial discussions Central Highlands Water was to undertake further hydraulic modelling work and to finalise its assessment of a preferred option.

The project is to be undertaken in a number of stages. The stages are as follows:

- Main Outfall Sewer – Southern section
 - **Stage 1:** These works have already been completed.

- **Stage 2:** duplication of approximately 2.5 km of existing sewer diameter range 525mm to 825mm. Duplicate sewer to be 600mm. The Stage 2 works are also subdivided into Stages 2a and 2b.
- Main Outfall Sewer – Northern section
 - **Stage 3:** duplication of approximately 1 km of existing sewer diameter range 375mm to 525mm. Duplicate sewer to be 450mm;
 - **Stage 4:** duplication of approximately 0.8 km of existing sewer diameter range 300mm to 375mm. Duplicate sewer to be 300mm; and
- Canadian Creek Main Sewer
 - **Stage 5:** duplication of approximately 1.9 km of existing sewer diameter range 300mm to 375mm. Duplicate sewer to be 375mm.

In arriving at the preferred option a number of other options were assessed (GHD, 2006b) including provision of detention storage, upgrading of the gravity sewer outfall, or a combined pumped/gravity solution. The options analysis included a 100 year outlook, and modelling undertaken for the year 2023 growth scenario. Some uncertainty still exists as to the optimum solution for Stages 2b, 3 and 4 because the recent drought conditions, and the absence of significant rainfall events, has not allowed the hydraulic model to be calibrated accurately for high flow conditions. Hence a final decision has not yet been taken as to whether a gravity sewer only or a combined gravity and pumped sewer option is preferred. The Options Analysis is not yet completed and Central Highlands Water does not presently have a summarised cost estimate matching the Water Plan Forecast.

The review team, in broad terms, considers that the project works are appropriately justified.

The project is to be undertaken in the stages described above and regardless of the final decision for Stages 2b, 3 and 4, Central Highlands Water considers that Stage 5 involving the duplication of the Canadian Creek Main Sewer, and Stage 2a involving 670m of the Southern Section of the Main Outfall Sewer, which are unaffected by the uncertainty alluded to above, may proceed. For these sections the design is being completed with a view to going to tender in May 2008 to procure a constructor.

CHW has advised that it has not yet developed a detailed specific program on the basis that it is still reviewing the options for delivering the outcome of this project and has yet to select a preferred option. A decision is to be made on the preferred option in this calendar year and once made the construction period is expected to be 2 years.

CHW also advised that an explicit link between the project cost estimates (22 December 2008) and an expenditure profile for the project linked with the proposed timing for the works. The

reconciliation process is not documented. A summary prepared for senior CHW management (Reference 7), that was undated but which the review team was advised as being about a year old (i.e. March 2007), indicated the cost of proposed works of Stages 2 to 5 as being \$14.3M for the gravity option and \$10.9M for the pumped option. (The NPVs of both these options were similar i.e. within 10% of each other, with the pumped option being lower). The total cost put forward in the Water Plan is \$16.4M. In view of the uncertainty as to the preferred solution the review team recommends that the expenditure forecast for the lower capital cost solution be adopted on the basis of prudence and economic efficiency.

The *recommended expenditure forecast* for regulatory purposes therefore shows a \$3.4M reduction in the overall cost being the difference between \$14.3M and \$10.9M. Given that there is also doubt about the timing of commencement of the project (preferred option, modelling etc not yet finalised), the expenditure has effectively been delayed a year with the \$3.4M reduction occurring in 2008/09 and 2009/10.

These recommendations are reflected in the Capital Expenditure Adjustments table, **Table 5-3**.

[NB: An alternative approach would be to delay the whole project effectively one year with the \$3.4M reduction amount effectively then falling in 2013/14.]

5.2.2 Goldfields Superpipe – Ballarat Link (\$13.8 million)

The Goldfields Superpipe is being constructed to deliver up to 18,000 ML/year (55 ML/day) of water originally sourced from the Waranga Channel out of Lake Eildon, to Ballarat. This new supply augmentation comprises a delivery system connecting Coliban Water's Sandhurst Reservoir which serves Bendigo to the White Swan Reservoir serving Ballarat. This system thus links into the recently completed Waranga Channel to Sandhurst Reservoir delivery system serving Bendigo, for which Coliban Water are responsible. The "Ballarat Link" being undertaken by central Highlands Water comprises:

- 87 km of 760mm steel pipeline being installed under two separate contracts;
- Three pump stations located respectively at Sandhurst Reservoir, Yandoit and Blampied.

The works are expected to be completed and become operational by 1 July 2008. The February 2008 status of the project was as follows:

- 98% of pipe delivered with 60% already laid;
- Constructions of pump stations is 25% complete;
- 3 pumps manufactured, tested and ready to deliver with 6 pumps cast and being machined;
- Power installation in progress;
- Sufficient water rights purchased for 2008 projected requirement.

The amount shown of \$13.8M is the residual component of the capital cost of this project whose total value is expected to be approximately \$180M. Subsequent to the Draft Report, Central Highlands Water advised that, in addition, expenditure of \$12.9M, planned for the upgrade of a pipeline and pump-station between Eppalock Reservoir and Sandhurst Reservoir, would be deferred from 2007/08 to 2008/09. This component of the project is being managed by Coliban Water.

This expenditure of \$13.8M in 2008/09 is committed for the completion of the current contracts. The bulk of this expenditure is planned for the purchases of water rights as shown in the breakdown below:

- Mini hydro: \$2.5M
- Project management: \$1.3M (incl. landowner compensation and legal)
- Water purchases: \$10.0M
- **Total: \$13.8M**

The review team was unable to clarify the actual aggregate expenditure to date in each completed financial year of the project and for the current financial year to date as well as the updated forecast of remaining expenditure on capital works in order to confirm the reasonableness of the forecast expenditure for this project in the second regulatory period. This is because the information requested in the Draft Report which would enable this to be done was unable to be provided.

The review team notes that the Mini Hydro scheme is expected to be commissioned in mid 2009 and to generate 500 kW at 610 L/s. As such this will generate a return on the capital expenditure which should be reflected as a saving in the operational expenditure forecasts. The review team recommends that the ESC verify this.

The review team recommends no change to the regulatory capital expenditure forecast other than the deferral of \$12.9M from 2007/08 to 2008/09, as indicated by Central Highlands Water and reflected in the Capital Expenditure Adjustments table, **Table 5-3**.

5.2.3 Country Towns Water and Sewerage Schemes (\$17.6 million)

The Country Towns Water Supply and Sewerage Program is a program managed by the Department of Sustainability and Environment in which the Government of Victoria will invest amounts as follows totalling \$42 million.

- \$21M in water and sewerage services for priority towns with the most urgent health and environment issues.
- \$12M on towns in the Gippsland Lakes area;

- \$6M on "showcase" towns that will develop innovative solutions that other towns can learn from;
- \$4M in upgrading water supply in towns with the most urgent problems; and
- \$3M in helping councils to prepare domestic wastewater management plans.

In January 2006 the Victorian Government announced the 35 "priority" country towns which would receive sewerage systems (23 towns) and /or improved water supplies (14 towns). The media announcement of January 9, 2006 states that the "statewide program aims to stop leaking septic tanks polluting rivers, groundwater and other waterways and damaging the environment". In the Central Highlands Water region the towns involved were:

- **Sewerage** – Blackwood, Gordon, ;
- **Water supply** – Landsborough.

In addition the following towns have been identified for provision of "innovative" sewerage schemes under the program that may provide "showcase" solutions that could be adopted elsewhere across the state.

- **Sewerage** – Smythesdale and Waubra.

In a similar way, following an announcement by the Minister for Agriculture and local parliamentary representative for Avoca, CHW received a directive from DSE to proceed with the options analysis for the **Avoca Water Supply Upgrade**, with a view to implementing the upgrade at a later date. These works are not within the scope of the Country Towns Water and Sewerage Schemes program, but have been included here by the review team for convenience.

CHW intend to bundle the proposed works for Blackwood, Gordon, Waubra and Smythesdale and also include the proposed upgrade to the Beaufort WWTP (project #9 in **Table 5-2**) within a single contract. In March 2008 expressions of interest (EOI) were called in order to shortlist potential parties who might tender for the project. The program for completion of the works provided in the EoI indicates that the successful tenderer should be appointed in November 2008 and works completed by December 2010.

CHW also advised the review team that the procurement method had not been finalised but that it is likely (and perhaps probable based on earlier but recent feedback CHW received from testing of the market) that some form of PPP arrangement would be adopted. This provides a significant level of uncertainty from a regulatory viewpoint as to whether capital expenditure or operating expenditure (through a toll) would be involved.

The review team also notes that for a number of the schemes (Landsborough and Avoca water supply schemes, Waubra and Smythesdale sewerage schemes) construction was due to commence



in the final year of the current regulatory period (i.e. 2007/08). This will not occur and the current status of the schemes is indicated in the following.

In the case of **Landsborough Water Supply** CHW advise that the design is completed and the planning scheme amendment is being sought for rezoning of the site. Thereafter arrangements will be made to purchase the land on a compulsory basis.

The review team understands from discussions with CHW that the options report analysis is being prepared for the Avoca Water Supply upgrade.

The other schemes are still in various stages of early planning and are the subject of the recent EOI. The review team notes that it would typically take approximately 15 to 18 months from the time of EOI to the commencement of significant construction work (and therefore expenditure). The profiling of the associated capital expenditure should reflect this.

While the obligation to undertake these works for the Country Towns Water and Sewerage Schemes, comprising the media announcement concerning the “priority towns” is understood, the review team is not aware of any obligations concerning timing associated with this obligation. In the case of the Avoca Water Supply upgrade, CHW advised the review team that the obligation to undertake the project was expressed in a directive received from DSE, but a copy of this was not available (as sought) from CHW. The review team has therefore not sighted evidence of the obligation. CHW verbally advised that DSE had indicated that it would provide a contribution of \$500K towards the project.

In terms of the business case for these projects the review team is not in a position to form a firm view on the business / financial merits of proceeding with these schemes. The review team notes that proceeding with these schemes requires cross subsidy from existing customers. It is generally recommended therefore that the regulatory expenditure concerned be deferred so as to minimise the adverse impact on existing customers and reduce the impact on water price increases.

In view of this, and while recognising that community expectations of imminent project delivery may be high especially for the project works for Blackwood, Gordon, Smythesdale, and Waubra, it seems likely that the most appropriate timing of the works for these towns is a delay of one year (Gordon and Blackwood) or two years (Smythesdale and Waubra) years. In effect this implies commencing construction payments after July 2009, instead of December 2008 indicated in the EoI to list interested tenderers (Reference # 22). Furthermore the most appropriate and likely timing of the Landsborough and Avoca works is a deferral of three years with construction related expenditure to commence in 2011/12. The works for Landsborough and Avoca would then be completed by the end of the second regulatory period and commence operation in the first year of the third regulatory period. This has the effect of facilitating a reduction of Capex peak in 2008/09

and defers expenditure from the period of high demand for resources to later years of relatively lower demand (**Section 3.2.1**).

In making the recommendations that follow, the review team considers from a global viewpoint that the ESC should seek stronger guidance from DSE and the government on the priority, business decision framework/rules and funding arrangements in the light of current market conditions (and project costs) for Central Highlands Water's proposed country towns sewerage and water supply schemes (and similar schemes for other water authorities) and the Avoca Water Supply Upgrade.

CHW has provided more up-to-date information in discussions following the Draft Report for the Blackwood, Gordon, Waubra and Smythesdale schemes that has resulted in an adjustment to the capital expenditure estimates for these schemes as follows:

- Blackwood: \$6.19M (reduced from \$6.95M in the Water Plan)
- Gordon: \$3.43M (reduced from \$3.95M in the Water Plan)
- Smythesdale: \$4.35M (increased from \$3.95M in the Water Plan)
- Waubra: \$1.61M (reduced from \$4.95M in the Water Plan)

[NB: No adjustments proposed for Avoca water supply (\$4.90M) and Landsborough water supply (\$3.0M) schemes.

In summary, for the various country town schemes identified, the review team:

- notes that there appears to be significant community interest in the various schemes proceeding as early as reasonably possible;
- notes CHW's poor delivery performance to date on these schemes, with a number of schemes materially behind schedule;
- notes that the planning and development for most schemes is not well advanced and that it would typically take some 15 to 18 months for significant construction works and capital expenditure to occur post the EOI stage (relevant to the Blackwood, Gordon, Waubra and Smythesdale schemes, i.e. most likely in the 2009/10 year at earliest);
- notes that expenditure is likely to be delayed beyond the dates nominated by CHW in its Water Plan, regardless of the urgency of the schemes, because it will take some time to proceed through the procurement process (including approvals, land acquisition) to selection of a constructor and commencement of the on-ground works;
- notes that there is considerable uncertainty regarding the funding mechanism for the works – and if a PPP type procurement approach is adopted then no capital expenditure will be required of CHW (and a toll would need to be incorporated in the operating expenditure);
- recommends from a *regulatory pricing viewpoint*, taking account of all the above and particularly the significant uncertainties, that:

- the revised capital expenditures proposed by CHW for the Blackwood, Gordon, Smythesdale and Waubra schemes be adopted (with the Avoca and Lanesborough schemes remaining as initially proposed in the Water Plan)
- the capital expenditure profiles for these CTWSS schemes be adjusted to reflect a realistic construction commencement date (and expenditure payments) as follows:
 - construction commencement in 2009/10 for the Blackwood, Gordon, Landsborough, Smythesdale and Waubra schemes. This represents a deferral of one year for the Blackwood and Gordon schemes from the original planned date of 2008/09 and a deferral of two years for the Landsborough, Smythesdale and Waubra schemes from the original planned date of 2007/08.
 - Construction commencement in 2010/11 for the Avoca scheme. This represents a deferral of three years from the original planned date of 2007/08. [Note: The review team originally considered that the most realistic construction commencement date for the Gordon and Blackwood schemes was also 2010/11 but revised its view on the basis of their inclusion in the recent EOI, although this later date still remains a possibility.]

These recommendations are reflected in the Capital Expenditure Adjustments table, **Table 5-3**.

- recommends that the ESC reconsider the expenditure profiles for the various CTWSS schemes recommended by the review team above if, in the period between the ESC's Draft Pricing Determination and Final Determination, CHW is able to better demonstrate sufficient and more robust confidence in how the uncertainties identified by the review team will be resolved (including funding, deliverability, programming/timing and expenditure) and/or how the schemes can be delivered in an earlier timeframe.

5.2.4 Plant and Vehicle Replacements

The forecast expenditure is similar to actual historical expenditure and on this basis is considered reasonable. Central Highlands Water has a business policy of purchasing its vehicles and rolling them over after three years (or such other period it determines to be economically efficient).

CHW has advised the review team that the reason why the capital expenditure approximately doubles in 2009/10 and thereafter compared with the immediately preceding years (or alternatively was approximately half the long term expenditure levels) was part of cost saving initiatives to assist funding of capital works during construction of the Superpipe. In this context, the review team considers this expenditure to be reasonable and prudent but suggests that there may be a more appropriate and optimal long term expenditure level and that the peak in 2011/12 could potentially be reduced by \$0.5M.

No adjustment to this expenditure is recommended at this stage. The review team notes, and CHW has confirmed, that there should be a matching revenue item as the capital expenditure on plant and vehicle replacements does not represent net amounts.

5.2.5 Ballarat North (\$8.65M) and Creswick WWTP Closure (\$1.05M)

This is really two projects. The primary works at the Ballarat North WWTP comprise the construction of a new wastewater treatment plant achieving biological nutrient removal, with filtration and UV disinfection facilities. Associated with this, the Creswick plant is closing down as its current influent sewage will be transferred (pumped) to the Ballarat North WWTP via a connecting pipeline.

The Ballarat North and Creswick water recycling schemes were originally envisaged for the first Water Plan period to be undertaken as BOOT projects. Contract settlement with the preferred supplier could not be achieved and the BOOT approach was abandoned and a “conventional” design and construction procurement approach then adopted. Construction works commenced in 2006/07.

Expenditure of \$8.65 million is forecast during the second regulatory period to complete the Ballarat North Water Reclamation Plant project. The total overall cost is approximately \$42.7M including additional works and advisors.

The new wastewater treatment plant is approaching technical completion and raw sewage was diverted to the plant in December 2007 to commence development of the biological processes and for commissioning purposes. Although the works are expected to be completed before the end of the 2007/08 financial year final payments for commercial acceptance once all testing has been completed, including the winter performance test planned for the winter of 2008. Hence significant payments will continue in 2008/09 with a relatively small final payment in the 2009/10 year after the defects liability period.

The Creswick contract for the transfer facilities has been awarded and the works for this component of the project are scheduled for completion in August 2008. The project does not include for the demolition of the existing Creswick WWTP and it is envisaged that this will occur during the third regulatory period.

In response to the Draft Report Central Highlands Water provided the review team with a summary reconciliation of the payments already made and payments proposed in the second regulatory period against the total cost of the project. The minor amendment (reduction from \$9.106M to \$8.3M) to the forecast expenditure in 2008/09 is based on this more detailed information.

This recommendation is reflected in the Capital Expenditure Adjustments table, **Table 5-3**.



5.2.6 Asset Maintenance: Replacement and Repairs

There are two projects which fall into the above category - item numbers 6 and 12 in **Table 5-2**.

Water Main Replacements (#6) (reference # 21)21)

Expenditure of \$6.5M in aggregate is planned for the second regulatory period. The average rate of expenditure is only 2% higher than the actual 2006/07 expenditure. The expenditure is managed through Central Highlands Water's asset management system.

Central Highlands Water provided the review team with a description and further information on the business decision-making steps and processes including **(1) service standards, (2) analysis, and (3) strategy** underpinning the asset management system and how this then leads to the **(4) program** of repairs or replacements and **(5) the projects** identified for each year and the quantum of expenditure involved. On the basis of this information the review team considers that the forecast expenditure is justified, reasonable and prudent.

The review team recommends that no amendment be made to the planned expenditure for these works.

Sewer Mains Replacement Program (#12)

Expenditure of \$2.15 million in aggregate is planned for the second regulatory period. The average rate of expenditure is more than four times greater than the actual 2006/07 expenditure.

The review team was concerned by the pronounced fluctuations in the expenditure profile and requested further supporting information and discussion, similar to that indicated in the second paragraph under 'Water Main Replacements' above, which enabled it to make a more informed assessment and judgement on the justification for such expenditure and the reasonableness and prudence of the expenditure quantum planned.

Central Highlands Water provided the review team with a copy of reference # 20) which enable the review team to verify that, in aggregate, the proposed expenditure is reasonable, prudent and deliverable. The expenditure is supported by a program of ongoing sewer inspections covering approximately 2% (or 24km out of a total of 1130km) of the sewerage network. These condition inspections revealed that approximately 15% of the mains inspected require either rehabilitation or replacement within the next 5 years, for which an allowance of \$150/m was provided.

As further inspections are undertaken it would be reasonable to assume that further sewers will be identified for rehabilitation or replacement. In similar sewerage systems where minimal previous rehabilitation programs have been in place, it might be expected that up to 7% of sewers might require short term rehabilitation (within 5 years). On the basis of this information a reasonable capital expenditure amount for the period would be approximately \$1.9M (which is similar to the amount proposed for the period of \$2.15M).

The review team notes that for contractual and efficiency reasons that CHW proposes to undertake the work in two years – 2009/10 and 2011/12 - and incur the expenditure primarily in two approximately \$1M amounts in those years.

The review team therefore recommends that no change to the quantum or timing of the forecast expenditure for this item.

5.2.7 Dam Safety Improvement Program (\$5.75M)

Central Highlands Water's dam management processes are based on the ANCOLD guidelines. Capital works are prioritised according to:

- The level of risk to Central Highlands Water;
- Available capital funds;
- Economic bundling of works – if savings can be achieved by bundling projects this may occur;
- Future status of the asset – for example possible future mothballing or a return to service of an asset may change its position on the priority list.

Costs of the proposed works were updated by GHD in 2006. The review team considers these costs to be reasonable.

The highest hazard category rating assigned to any dam in Central Highland Water's portfolio is "High C" and there are 6 dams in that category with total value of works estimated as approximately \$3.5 million. All other works are assigned a lower risk rating being either "significant" or "low".

The review team proposed in the Draft Report that expenditure be limited to \$3.5 million. Central Highlands Water has provided further information on its business approach and the reasonableness of and justification for undertaking further work on lower risk category dams. In summary, the works planned are for dams which are the sole source of the local supply and loss or reduction of storage capacity would seriously compromise CHW's capacity to maintain supply continuity. In the current environment of water scarcity this seems a prudent approach.

The review team therefore recommends no change to the expenditure forecast for this item.

5.2.8 Ballarat South WWTP Improvements (\$4.7M)

The proposed works to be undertaken on improvements to the Ballarat South WWTP are supported and documented in reports provided to the review team (including references numbers 10, and 26).

The proposed works include maintenance and upgrades, and the key items are:

- Aeration system (\$1.8M)
 - Replacement of diffusers;

- Provision of dissolved oxygen control zones;
- Replacement of header pipe-work and control valves;
- Inlet works modifications (\$0.7M);
- Wet weather flow containment (\$0.64M);
- Control logics PLC and telemetry (\$0.2M).

The review team, in broad terms, considers that the project works are broadly justified although it considers the information contained in the documentation provided by Central Highlands Water (references 10 and 26) to fall short of providing a robust and sufficient justification particularly in relation to timing of the proposed works. The review team considers that the nature of the works planned is such the forecast regulatory capital expenditure could be deferred by a year without significant adverse consequences and recommends that for regulatory pricing purposes this adjustment be made. Forecast expenditure for the final year has not been deferred and thus the total amount of expenditure on the project works for the second regulatory period remains the same.

This recommendation is reflected in the Capital Expenditure Adjustments table, **Table 5-3**.

5.2.9 Beaufort WWTP Upgrade and Reuse (\$4.3M)

CHW plans to undertake the Beaufort WWTP upgrade in a bundled contract together with four of the Country Town Sewerage and Water Supply schemes as discussed in **Section 5.2.2**.

The project driver as indicated in documents provided to the review team is that “*The quality and volume of the effluent discharged in Yam Holes Creek may not meet future environmental obligations*” (reference # 22); and/or as “*land disposal is the currently preferred*” option described in the EPA guidelines (reference # 9); and the disinfection capacity is insufficient (reference # 7) as the E-coli discharge limit is not being met. However the current flow is approximately 100 ML/year and the Beaufort WWTP EPA amended licence (dated 19 June 2001) sets a limit of 200ML/year on disposal to the Yam Hole Creek. Reference # 9 indicates that the current flow and loads being received by the plant are well below the rated design capacity. Similarly Reference # 9 indicates only one failure in the E-coli of the effluent discharges from the twelve samples taken (refer Section 3.4 of Reference # 9).

The review team is therefore unclear as to the driver for this project, and considers that the actual driver may be to increase levels of water recycling, and Reference # 7 states that “*the EPA licence requires that ... discharge from the existing wastewater treatment plant to Yam’s Hole Creek must cease by 31st December 2005*”. This obligation however is not expressed in CHW’s January 2007 report (reference # 9) which refers on the contrary to a licence allowing discharges to the Creek.

The proposed project comprises:

- A new WWTP;
- Relocation of irrigation infrastructure;
- Decommissioning the existing WWTP.

The review team recommends, at a minimum, that the forecast expenditure for this project be deferred in line with the projects in the Country Towns Sewerage and Water Supply project which are to be constructed together in terms of the recent call for expressions of interest advertised by CHW (reference #22). Alternatively, and on the basis that the project driver for this project requires further substantive supporting information including clarification of the obligation from the EPA, the review team recommends that the forecast expenditure for this project be entirely deferred to the third regulatory period.

The review team recommends the former approach for regulatory purposes, indicating expenditure deferral with a likely commencement of construction related activity in July 2009. This is reflected in the Capital Expenditure Adjustments table, **Table 5-3 in Section 5.3**.

5.2.10 Raw Water Pipeline Improvements (\$3.3M)

The review team understands that the works planned comprise improvements to the pipeline / water transfer infrastructure connecting the headworks structure to Maryborough's water treatment plant. The review team was unable to reach a properly informed or considered view on the reasonableness of the cost estimate, the need for the project or the prudence of the forecast expenditure on the basis of the information provided to it by CHW on these works. This information comprised references 8 and 15.

No recommendation is made as to the regulatory expenditure forecast.

5.2.11 Daylesford Sewer System Upgrade (\$1.6M)

The proposed works are planned to achieve compliance with the EPA requirement to contain sewage flows in events up to the 1:5 year rainfall event. Hydraulic modelling indicates that under current conditions spillage may commence following a 1:2 year event. The Daylesford sewerage system includes 13 pump stations and three of these have insufficient storage to contain 3 hours of peak dry weather flow conditions. In total improvements are planned to be undertaken in five pump-stations, in conjunction with upgrades to the rising mains at two of these stations. The costs involved comprise approximately 40% of the total cost with the remainder allowed for the upgrade of the sewer outfall from Hepburn Springs to the WWTP.

The review team considers that the forecast expenditure is necessary, reasonable, prudent and deliverable within the second regulatory period. No change is recommended.

5.2.12 Recycled Water Ballarat (Lake Wendouree) (\$1.5M)

This project is being jointly sponsored by CHW, Ballarat City Council (BCC) and the State Government who are each contributing \$2M to the project. The total cost indicated in CHW's capital works plan for the first and second regulatory periods in **Table 5-2** of \$4.305M includes the BCC contribution of \$2M, for which the review team understands there is matching revenue. (The review team was advised that this is possibly an error in the Capital Works Plan and the total project cost (\$6 or 6.5M) should be reflected, with corresponding revenue equal to the BCC and State Government contributions).

The project is driven by the perceived need to maintain water levels in Lake Wendouree as it is an important water body for the City of Ballarat and a focal point for recreational, sporting and cultural activities. The local catchment is insufficient to maintain the water levels which have historically been supported from Gong Gong Reservoir. However recent water restrictions have meant that this water is no longer available.

An options analysis was undertaken as to the best means of maintaining water levels to identify the scope of works required. The project builds on the storm water harvesting diversion works, wetland (Paul's Wetland) and pump-station and pipeline to deliver water to the Lake that were recently completed by the Ballarat City Council and the further works comprise four principal elements:

- 'Polishing' plant at Ballarat North WWTP comprising a micro filtration, UV disinfection and storage facilities (and complementing the upgrade works to the Ballarat North WWTP (**Section 5.2.5**));
- Transfer facilities from the Ballarat North WWTP to Paul's Wetland,
- Diffuser pipeline laid along the bed of the Lake Wendouree (commencing at the end of the pipeline recently completed by BCC); and
- Pumpstation and delivery system to the main oval in Ballarat.

The current status of the project is that:

- the contract has been placed for the diffuser pipeline;
- the design of the balancing storage is in progress; and
- tenders are being called for consultants to design the polishing plant.

The review team:

- notes the possible underestimate in the forecast project cost;
- considers the project reasonable, and prudent; in particular on account of the project co-funding arrangements;
- considers the forecast expenditure deliverable;

- does not recommend any change to the forecast expenditure proposed by CHW.

5.3 Recommendations

Recommendations on adjustments to Central Highland Water's regulatory capital expenditure forecasts, as summarised in **Table 5-3**, are that:

- expenditure for the Ballarat Sewer System Upgrade be reduced by \$3.4M which provides for sufficient expenditure for Stages 2b to 4 consistent with construction of the lower cost pumping option;
- expenditure for the Goldfields Superpipe provide for a deferral of \$12.9M from 2007/08 to 2008/09;
- adjustments be implemented in for the Country Towns Sewerage and Water Supply Scheme projects to reflect the revised cost estimates provided by CHW and to defer expenditure such that:
 - the schemes for Blackwood, Gordon, Smythesdale, Waubra and Landsborough commence construction in 2009/10;
 - the schemes for and Avoca commence construction in 2010/11.
- Expenditure for the Ballarat South WWTP improvements for each of the first four years of the regulatory period be deferred by one year; and
- the profile of forecast expenditure for the Beaufort WWTP Upgrade and Reuse project be deferred to match the starting date of the Country town projects with which it is to be concurrently developed.

With respect to the Country Towns Water Supply and Sewerage schemes, the review team would like to note that its recommendations on the likely timing of the related expenditure are based on the fact that CHW is behind schedule in delivering these schemes, the programming is more indicative than robust and the funding is uncertain (if a form of PPP, then no capital from CHW would be required).

Consequently, the review team further recommends that the ESC reconsider the expenditure profiles for the various CTWSS schemes (as recommended by the review team in **Table 5-3**) if, in the period between the ESC's draft and final pricing determination, CHW is able to better demonstrate sufficient and more robust confidence in how the uncertainties identified by the review team will be resolved (including funding, deliverability, programming/timing and expenditure).

Table 5-3 outlines the recommended revisions to Central Highland Water's capital expenditure forecasts for the five year regulatory period.



■ **Table 5-3: Central Highlands Water: Recommended Changes to Regulatory Capital Expenditure Forecast**

Change Item	Project/Description	Forecast	\$M					
			2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
1	Ballarat Sewer System Upgrade	Original Water Plan:	0.47	1.56	2.44	3.89	5.54	2.97
		Recommended Revised:	0.47	0.00	0.60	3.89	5.54	2.97
		Recommended Net Change:		-1.56	-1.84			
2	Goldfields Superpipe :Ballarat Link	Original Water Plan:	131.93	13.80	0.00	0.00	0.00	0.00
		Recommended Revised:	119.03	26.70	0.00	0.00	0.00	0.00
		Recommended Net Change:	-12.90	12.90				
3	Blackwood sewerage scheme (Country town sewerage scheme)	Original Water Plan:	0.05	3.90	3.00	0.00	0.00	0.00
		Recommended Revised:	0.05	0.00	3.07	3.07	0.00	0.00
		Recommended Net Change:		-3.90	0.07	3.07		
4	Gordon sewerage scheme (Country town sewerage scheme)	Original Water Plan:	0.05	2.00	1.90	0.00	0.00	0.00
		Recommended Revised:	0.05	0.00	1.38	2.00	0.00	0.00
		Recommended Net Change:		-2.00	-0.52	2.00		
5	Waubra sewerage scheme (Country town sewerage scheme)	Original Water Plan:	2.95	2.00	0.00	0.00	0.00	0.00
		Recommended Revised:	0.00	0.00	1.61	0.00	0.00	0.00
		Recommended Net Change:	-2.95	-2.00	1.61			
6	Smythesdale sewerage scheme (Country town sewerage scheme)	Original Water Plan:	2.05	1.90	0.00	0.00	0.00	0.00
		Recommended Revised:	0.00	0.00	2.26	2.09	0.00	0.00
		Recommended Net Change:	-2.05	-1.90	2.26	2.09		
7	Avoca water supply upgrade	Original Water Plan:	2.00	2.00	0.90	0.00	0.00	0.00
		Recommended Revised:	0.00	0.00	0.00	2.00	2.00	0.90
		Recommended Net Change:	-2.00	-2.00	-0.90	2.00	2.00	0.90
8	Landsborough water supply - (Country town water upgrade scheme)	Original Water Plan:	3.01	0.00	0.00	0.00	0.00	0.00
		Recommended Revised:	0.00	0.00	3.00	0.00	0.00	0.00
		Recommended Net Change:	-3.01		3.00			
9	Ballarat North WWTP & Creswick Closure	Original Water Plan:						
		Recommended Revised:						
		Recommended Net Change:						
10	Ballarat South WWTP improvements	Original Water Plan:	0.00	0.20	0.67	2.09	1.38	0.38
		Recommended Revised:	0.00	0.00	0.20	0.67	2.09	1.75
		Recommended Net Change:		-0.20	-0.46	-1.42	0.71	1.38
11	Beaufort WWTP and Reuse (Lake Wendouree)	Original Water Plan:	0.10	0.50	1.00	2.50	0.30	0.00
		Recommended Revised:	0.00	0.10	0.50	1.00	2.50	0.30
		Recommended Net Change:	-0.10	-0.40	-0.50	-1.50	2.20	0.30
Total Recommended Net Change:			\$ (23.01)	\$ (1.06)	\$ 2.72	\$ 6.24	\$ 4.91	\$ 2.58
Original Water Plan Total Regulatory Capex:			\$ 179.61	\$ 53.55	\$ 25.46	\$ 22.16	\$ 20.88	\$ 18.27
Recommended Revised Total Regulatory Capex:			\$ 156.59	\$ 52.49	\$ 28.18	\$ 28.40	\$ 25.79	\$ 20.84



6. Operating Expenditure (Opex)

The upper part of **Table 6-1** presents a breakdown of forecast operating expenditure by cost driver. The lower part of **Table 6-1** shows the increases in each year relative to the cost incurred in the base year of 2006/07 for each line item.

This lower part of the table indicates that energy and repairs and maintenance are two of the most significant drivers of the net total increased operational expenditure (of nearly \$52M) for the second regulatory period relative to actual expenditure in 2006/07. The key elements of this increased expenditure are:

- Energy (\$18.78M or 36% of the net total increase);
- Repairs and Maintenance (\$13.21M or 25% of the net total increase);
- BOOT Tolls (\$6.56M or 13% of the net total increase); and
- Labour (\$5.01M or 10% of the net total increase).

■ **Table 6-1: Central Highlands Water: Historical and Forecast Operating Expenditure by Cost Driver**

Expenditure in \$ 000 real (1/1/07)	FIRST REG PERIOD		SECOND REG PERIOD					SECOND REG PERIOD	
	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	Total	%
Labour	11,802	11,892	12,486	12,710	12,808	12,913	13,101	64,018	28%
Energy	1,272	1,859	4,208	5,479	6,517	4,462	4,467	25,133	11%
Materials	175	300	162	168	168	164	165	825	0%
Chemicals	363	525	469	537	572	573	573	2,723	1%
Bulk Water Purchases	102	246	484	561	638	513	524	2,719	1%
Outsourced Services	1,983	2,306	2,318	2,350	2,469	2,434	2,531	12,103	5%
BOOT Tolls	8,897	9,710	9,970	10,123	10,287	10,317	10,347	51,044	22%
Repairs and Maintenance	2,532	2,732	4,677	5,041	5,776	5,454	4,920	25,868	11%
Other	8,095	8,232	8,454	8,860	8,830	8,678	8,842	43,664	19%
Total	35,221	37,802	43,228	45,829	48,065	45,507	45,468	228,098	100%

Expenditure increase above 2006/07 Expenditure in \$ 000 real (1/1/07)	FIRST REG PERIOD		SECOND REG PERIOD					SECOND REG PERIOD	
	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	Total	%
Labour	-	90	684	908	1,006	1,110	1,299	5,007	10%
Energy	-	587	2,936	4,207	5,245	3,190	3,195	18,772	36%
Materials	-	125	(13)	(8)	(8)	(12)	(11)	(52)	0%
Chemicals	-	161	106	174	209	210	210	908	2%
Bulk Water Purchases	-	144	382	459	536	411	422	2,210	4%
Outsourced Services	-	323	335	367	486	451	548	2,187	4%
BOOT Tolls	-	813	1,073	1,227	1,390	1,420	1,450	6,561	13%
Repairs and Maintenance	-	201	2,146	2,509	3,244	2,923	2,388	13,210	25%
Other	-	137	359	765	735	583	747	3,190	6%
Total	-	2,580	8,007	10,607	12,844	10,286	10,247	51,992	100%

Note: The review team notes that the gross Opex cost of \$35.221M for 2006/07 from the cost breakdown (provided by CHW) in **Table 6-1** above is greater than the gross Opex of \$34.36M for 2006/07 from **Table 6-2**. This impacts the assessment of some costs.



6.1 Derivation of the Variance from Target BAU Opex

Table 6-2 shows the estimation of the Target BAU Opex costs (to achieve 1 percent p.a. productivity improvement after adjustment for growth), and the ‘Variance from Target BAU Opex’ implicit in Central Highlands Water’s expenditure forecasts.

■ **Table 6-2: Historical & Forecast Opex and Variance to Target BAU Opex (Real 1/1/07 \$M)**

Expenditure in \$ millions real (1/1/07)	FIRST REG PERIOD			SECOND REG PERIOD				
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
BAU opex	29.74	32.59	35.93	41.25	43.90	46.15	43.59	43.55
New obligations	-	-	-	-	-	-	-	-
Sub-total Opex	29.74	32.59	35.93	41.25	43.90	46.15	43.59	43.55
Bulk water charges	-	-	-	-	-	-	-	-
Licence fees	0.35	0.26	0.24	0.34	0.29	0.28	0.28	0.28
Enviro levy	1.51	1.51	1.64	1.64	1.64	1.64	1.64	1.64
Gross operating expenditure	31.60	34.36	37.80	43.23	45.82	48.06	45.51	45.47
Target BAU Opex			32.78	32.97	33.17	33.36	33.55	33.75
Variance from Target BAU Opex			3.14	8.28	10.73	12.79	10.03	9.80
Customers and Consumption								
Total customers ('000)	56.52	57.15	58.07	59.00	59.94	60.90	61.87	62.86
Growth relative to 2006-07	-	1.00	1.016	1.032	1.049	1.066	1.083	1.100

NOTE: The review team understands that the PCW review of demands and growth forecasts has recommended that a growth rate of 1.6% p.a. be adopted for CHW over the regulatory period. To be consistent with the outcomes of the PCW review, SKM has also adopted a growth rate of 1.6% p.a. for the purposes of establishing the Target BAU Opex and the Variance from Target BAU Opex.

For all years of the regulatory period (other than 2008/09) the Target BAU Opex is higher and the Variance from Target BAU Opex requiring explanation is lower than if these parameters were determined on the basis of the customer numbers put forward by CHW in its Water Plan.

Overall and in each year of the second regulatory period, CHW’s total planned operating expenditure (excluding bulk water charges, licence fees and environmental levy) is greater than Target BAU Opex. That is the Variance from Target BAU Opex is positive for each year of the regulatory period, and requires explanation. This indicates that there are real increases in planned operating expenditure above BAU (2006/07 as the base year) after allowance for growth and the stipulated 1% p.a. productivity improvement. Thus prima facie Central Highlands Water will not achieve the 1% p.a. productivity target unless some or all of the new/additional costs planned can be justified as part of the future BAU Opex base.

An assessment of these new/additional cost line items is provided in the following sections.

6.2 Additional costs relative to 2006/07 base ('Explanation of Variance')

Table 6-3 presents a list of projects and activities that Central Highlands Water has provided to explain the Variance from Target BAU Opex shown in Table 6-2. The list of projects and activities is sorted from most expensive to least expensive. The variance explained in Table 6-3 is greater than the actual variance presented in Table 6-2 in each and every year and overall for the five year regulatory period.

■ **Table 6-3: "New" Costs or Explanation of the Variance from Target BAU Opex – as submitted by Central Highlands Water**

Description	Forecast Expenditure (\$ 000 - real Jan 2007)					Total
	2008/09	2009/10	2010/11	2011/12	2012/13	
Goldfields Superpipe	3,745	4,892	6,040	3,745	3,745	22,167
Maintaining Service Standards	1,627	1,760	2,540	2,072	1,763	9,762
Water Augmentation Projects	1,312	1,430	1,441	1,484	1,660	7,328
New Regulations	830	1,111	1,131	1,182	1,251	5,505
Ballarat North Water Reclamation Plant	1,128	1,143	1,006	1,016	1,126	5,419
Country Towns	150	664	1,033	1,033	1,033	3,912
Credit management	73	128	131	135	139	607
State tariff levy	125	125	125	125	125	625
Total	8,990	11,253	13,448	10,793	10,842	55,325
Variance from Target BAU Opex	8,277	10,729	12,785	10,034	9,799	51,624
Difference	712	524	663	758	1,044	3,701

Note: The Variance from Target BAU Opex line in the above table has been revised from that advised to CHW at the Draft Report stage to be consistent with Table 5-2 (which has adopted the 1.6% p.a. growth rate).

The explanations and detailed breakdowns of the above items provided by Central Highlands are shown in Appendix B.

A number of activities have been selected from the above list for more detailed assessment, based on cost and other factors. These are discussed in the following sub-sections.

6.2.1 Electricity

One of the difficulties in assessing CHW's electricity expenditure is that CHW has advised that it could not readily provide a summary of power demands by site or in aggregate. This is surprising given the general focus on GHG issues and the efficient use of energy. The starting point for ensuring efficient energy usage is an accurate (or least reasonable) estimate of demands. CHW has advised that while it can provide accurate costs for electricity (through interrogation of its general ledger), the only way to obtain demand information would be through a manual inspection of each of its bills.

As a consequence the base power demands (2006/07) by site and in aggregate are not known to the review team. Neither is the difference in demands known compared with the base year (other than for the big projects, e.g. Superpipe). That is, growth in base demands (in MWhr) has not been advised explicitly by CHW. Consequently the review team was not able to assess the electricity power demands for reasonableness.

Therefore a somewhat modified approach has had to be adopted compared with the other businesses for assessing the reasonableness of CHW'S electricity costs. The review team had to assess this issue on the basis of the reasonableness of the electricity costs put forward by CHW (without knowledge of the demands).

CHW has provided cost information for:

- BOOT Tolls electricity component (refer CHW letter of 11 March 2008 to ESC in response to the Draft Report)
- Superpipe (refer information for the Darft Report, CHW letter of 11 March 2008 to ESC in response to the Draft Report)
- All other sites (refer spreadsheet "WP BAU Power", which CHW has provided and advises contains all the electricity costs for existing and future demands other than for the BOOT Tolls [electricity component] and the Superpipe which are separately provided).

Consequently the electricity costs for all other sites has been imputed from, and assessed on the basis of the spreadsheet provided by CHW entitled "WP BAU Power" costs (a spreadsheet containing the costs of each of 383 different sites for 2006/07 (the base year), the forecast end of year costs for 2007/08 and the planned costs for the five years of the regulatory period for each of these sites (which information underpins the Water Plan).

In discussions following the Draft Report, CHW:

- advised that it had not provided for any real increase in electricity costs over the regulatory period
- advised that it had subsequently received advice from Marsden Jacobs who advised CHW that for the regulatory period a flat real increase of 19% overall relative to 2006/07 would be appropriate for each year of the regulatory period (i.e. on a comparable basis to the manner in which the review team had formed its view on real cost increases).
- proposed in its 11 March 2008 letter to the ESC (in response to the Draft Report) that a 19% real increase in electricity costs (relative to 206/07) be applied to all electricity costs (BOOT Tolls component, Superpipe and BAU electricity costs. CHW has provided its summary level view of this in ikts 11 March 2008 letter.

In the absence of electricity demand data, the only way that the review team could obtain confidence that the no provision had been made for real cost increases was by inference from an assessment of the Superpipe electricity cost information for consistency and reasonableness (e.g. with Coliban Water’s component) and the internal consistency from the “WP BAU Power” costs spreadsheet.

The review team obtained reasonable confidence, but was not absolutely certain, and proceeded with the assessment on this basis.

The following provides an assessment of the real increases in electricity costs for the whole of CHW, excluding the Superpipe electricity costs which are dealt with in **Section 6.2.3** (which deals with an assessment of all the Superpipe costs).

The real increases in electricity costs excluding the Superpipe proposed by CHW is summarised in **Table 6-4**. This is based on CHW’s letter of 11 March 2008.

■ **Table 6-4: CHW View of Real electricity Cost Increases (excluding Superpipe)**

Item Description	Electricity Expenditure - Second Regulatory Period (\$'000K, real in 1/1/07)							Total RP2
	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	
CHW view of Aggregate Electricity Opex as per advice (Dec 2007)								
Aggregate Opex as per Table 6.1 [Opex by driver] [provided by CHW, consistent with Water Plan]	1272	1859	4208	5479	6517	4462	4467	25133
Incremental increase in Real Electricity Costs (> 06/07) - growth and new demands)			2936	4207	5245	3190	3195	18773
CHW view of Electricity Opex (excluding Superpipe) as per 11 March 2008 letter								
Boot Tolls								
As per letter	0	718	737	743	749	756	761	3747
Adjusted for electricity price increase (19% p.a in all years relative to 06/07)			878	885	892	899	905	4458
<i>CHW Proposed Increase compared with Water Plan</i>			140	141	142	144	145	712
All other BAU Sites Demand -								
Total Demands as per 11 March 2008 letter	925	1457	1692	1920	1920	1934	1934	9400
New demands - estimated increase (compared to previous year, based on spreadsheet provided including only significant projected items)		530	195	200	0	0	0	
Adjusted Total demands		1455	1650	1850	1850	1850	1850	9048
<i>CHW Proposed real electricity cost increases for BAU Sites (19% increase)</i>			313	351	351	351	351	1719
CHW Proposed Total Increase in real electricity costs			454	493	494	495	496	2431

The real increases in electricity costs excluding the Superpipe have been assessed by the review team and the outcomes of this assessment is summarised in **Table 6-5**. That is all CHW electricity costs (BOOT Toll component, BAU existing demands/costs, new demands/costs) is included in this assessment. The format of the table is similar to that presented in **Table 6-4** for convenience.

■ **Table 6-5: Review Team Assessment of CHW's Real Electricity Cost increases (excluding Superpipe)**

Line Item	Item Description	Electricity Expenditure - Second Regulatory Period (\$'000K, real 1/1/07)							Total RP2
		2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	
	CHW view of Aggregate Electricity Opex as per advice (Dec 2007)								
1	Aggregate Opex as per Table 6.1 [Opex by driver] [provided by CHW, consistent with Water Plan]	1272	1859	4208	5479	6517	4462	4467	25133
2	Incremental increase in Real Electricity Costs (> 06/07) - growth and new demands)			2936	4207	5245	3190	3195	18773
	Review Team Assessment of Electricity Opex (excluding Superpipe)								
	Boot Tolls								
3	As per CHW 11 March 2008 letter	0	718	737	743	749	756	761	3747
4	Adjusted for electricity price increase (12% p.a in 2008/09, 15% all other years relative to 06/07)			826	855	862	869	875	4286
5	Review team proposed increase compared with Water Plan			88	111	112	113	114	540
	All other BAU Sites Demand -								
6	Total Demands as per 11 March 2008 letter	925	1457	1692	1920	1920	1934	1934	9400
7	New demands - estimated increase (compared to previous year, based on spreadsheet provided including only significant projected items)		330	350	200	0	200	0	750
8	Adjusted Total demands (rephasing) [Compare total demands as advised by CHW]		1255	1605	1805	1805	2005	2005	9223
9	Proposed real electricity cost increases for BAU Sites (12% p.a in 2008/09, 15% all other years wrt 06/07)			193	271	343	381	381	1568
10	Review team Proposed Total Increase in real electricity costs wrt Water Plan [=adjustment to Water Plan] [= Line 9 + Line 5]			281	382	455	494	495	2108
11	Allowable increase as an explanation of Variance from Target BAU opex [= Line 10 + Line 7 (new demands)]			961	1262	1335	1574	1575	6708

Notes:

- (1) The phasing and adjustment of some of the most significant new demands is reflected in Line 7, **Table 6-5**. This phasing is consistent with any relevant shifts in capital projects as appropriate (including CTWSS schemes).
- (2) New electricity costs that have been included in other items that CHW has put forward as an explanation of the Variance from Target BAU Opex (and which are to be assessed in the later sections of this report) have been included in here (i.e. in **Table 6-5**) and such electricity costs have been removed from the items when assessed later.

In summary the overall outcomes of the review team's assessment of the whole of CHW's electricity costs for all sites except the Superpipe is that:

- The quantum of real electricity cost increases which is justifiable as an explanation of the Variance from Target BAU Opex is \$6,708K in aggregate over the five year regulatory period (Line Item 11, **Table 6-5**);
- The adjustments to (an increase in) CHW's Water Plan Operating Expenditure for real electricity cost increases is \$2,108K in aggregate over the period (Line Item 10, **Table 6-5**).

The latter adjustment is reflected in the Operating Expenditure Adjustments table in **Section 6.3**.

6.2.2 Labour

The review team's assessment of the justifiable, reasonable and prudent real increases in labour costs is indicated in **Table 6-6**. These real cost increases cover real increases in "base labour costs" of 1.25% p.a. and the costs of various new personnel/positions considered reasonable and prudent.

The review team notes that the gross Opex cost of \$35.221M for 2006/07 from the cost breakdown (provided by CHW) in **Table 6-1** above is greater than the gross Opex of \$34.36M for 2006/07 from **Table 6-2**. This impacts the confidence in the base year labour cost indicated in **Table 6-1** of \$11,802K. If this was discounted in proportion to the discrepancy between **Tables 6-1** and **6-2** at a gross level, a base year labour cost of \$11,510K would be obtained. The review team has adopted \$11,650K for assessment purposes.

CHW has not provided a consolidated view of the increased personnel/positions it proposes but rather has distributed these among the various other items that it considers contribute to the explanation of the Variance from Target BAU Opex.

CHW has proposed a number of new positions covering a range of activities. These include:

- Technical officer, trade waste management
- Water resources officer (New regulations)
- Water treatment officer (50%), (New regulations)
- Sustainability officer (New regulations)
- Records management officer [Consultant - records management, Software - records management], (New regulations) - The review team considers that additional costs associated with records management should be offset by productivity improvements and improvements in business practices in order to be adequately justified. These costs therefore are not considered to form part of the explanation of the Variance from Target BAU Opex
- Unaccounted for water team leader (water augmentation)
- Unaccounted for water – support staff (6 Number) (water augmentation)
- Debt management officers

The review team has taken an overall view of the activities proposed, the general business needs and what is prudent and reasonable from a regulatory operating expenditure viewpoint and proposes the personnel resources as per **Table 6-6** as appropriate for establishing prudent and reasonable regulatory operating expenditure (for the new labour component).

The net numbers may be less as there are a number of demand management personnel that will progressively finish in the period and therefore the view in **Table 6-6** may be generous.

■ **Table 6-6: Assessment of Real Increases in CHW's Labour Costs**

Line Item	Description	Forecast Incremental Expenditure wrt 2006/07 (\$ 000 - real Jan 2007)						Total
		2006/07	2008/09	2009/10	2010/11	2011/12	2012/13	
	Central Highlands Water breakdown							-
1	Base Labour Cost (2006/07)	11,650						
2	Water Plan Labour expenditure (refer Table 6-1)		12,486	12,710	12,808	12,913	13,101	64,018
3	Movement in labour cost wrt 2006/07		836	1,060	1,158	1,263	1,451	5,768
4	Number of FTEs	175						-
5	Average cost per FTE (\$K p.a.)	66571						-
6	Proposed additional FTEs (wrt 2006/07)		11.5	12.5	12.5	12.5	12.5	
	Review Team Recommendation							-
7	Base labour cost plus 1.25% pa real increases		11,943	12,092	12,244	12,397	12,552	61,227
8	Movement in labour cost wrt 2006/07 - i.e. real increase in base labour costs		293	442	594	747	902	2,977
9	Additional FTEs (full year prudent nos)		6	8	9	9	8	
10	Cost of additional FTEs (full year prudent expenditure)		456	615	701	709	638	3,119
11	Total Labour Cost		12,399	12,707	12,944	13,106	13,190	64,346
12	Incremental Real labour Cost increase Allowable [= allowable explanation of Variance]		749	1,057	1,294	1,456	1,540	6,096
13	Adjustment to Water Plan		(87)	(3)	136	193	89	328

In summary the review team recommends that:

- The quantum of real labour cost increases which is justifiable as an explanation of the Variance from Target BAU Opex is \$6,096K in aggregate over the five year regulatory period (Line Item 12, **Table 6-6**);
- The adjustments to (a small increase in) CHW's Water Plan Operating Expenditure for real labour cost increases is \$328K in aggregate over the period (Line Item 13, **Table 6-6**).

6.2.3 Goldfields Superpipe – Ballarat Link

The total cost originally put forward by Central Highlands Water, and which formed the basis of its Water Plan Opex, totals \$22.167M. If justified this would effectively have accounted for about 40% of the explanation of the Variance from BAU Opex.

A breakdown of these costs as originally provided by Central Highlands Water to the review team for the Draft Report stage of the review is shown in **Table 6-7**. **Section 5.2.2** contains a brief description of the project.

The main components of the operational expenditure are:

- Charges levied by Coliban Water for delivery of water into Sandhurst Reservoir;
- Electricity charges for pumping of water at the three pumpstations;



- Fixed and annual volumetric charges for permanent water rights;
- Operations and maintenance costs of the new infrastructure.

■ **Table 6-7: Expenditure breakdown for Goldfields Superpipe (Ballarat Link) - Original CHW View**

Description	Forecast Incremental Expenditure wrt 2006/07 (\$ 000 - real Jan 2007)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Volume delivered (ML)	5,000	7,500	10,000	5,000	5,000	32,500
Coliban Water Charges (Waranga to Sandhurst)	-	-	-	-	-	-
Fixed	42	42	42	42	42	211
Variable	85	128	170	85	85	553
Pumping	675	1,013	1,350	675	675	4,388
GWM Water charges (Water rights)	300	368	435	300	300	1,703
Electricity for pumping	1,400	2,100	2,800	1,400	1,400	9,100
O&M of infrastructure	1,243	1,243	1,243	1,243	1,243	6,214
Total cost	3,745	4,892	6,040	3,745	3,745	22,167

Following release of the Draft Report and in its response to the ESC on it (letter of 11 March 2008), CHW has provided a revised view of the breakdown of the costs for the Goldfields Superpipe – Ballarat Link. This revised view is indicated in **Table 6-8**. The key differences are:

- An increase in costs associated with additional temporary water rights that CHW now intends to purchase in 2008/09. This increases the total volume to be supplied through the Superpipe in 2008/09 to 10,000ML (up from 5,000ML originally);
- An increase in electricity costs to account for the real increase proposed by Marsden Jacobs (of 19% in each year relative to 2006/07);
- A reduction in operations and maintenance costs from \$1243K p.a. to \$474 p.a. (based on advice from its consultant PJB Associates);
- An increase in GMW charges in 2008/09 for storage and pumping of the additional water purchased.



■ **Table 6-8 Expenditure breakdown for Goldfields Superpipe (Ballarat Link) – Revised CHW View (March 2008)**

Description	Forecast Incremental Expenditure wrt 2006/07 (\$ 000 - real Jan 2007)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Volume delivered (ML)	10,000	7,500	10,000	5,000	5,000	37,500
Coliban Water Charges (Waranga - Sandhurst)						
Fixed	42	42	42	42	42	211
Variable	138	103	138	69	69	517
Pumping	1,096	822	1,096	548	548	4,110
Electricity for pumping	2,275	1,706	2,275	1,137	1,137	8,530
GWM Water charges (Water rights, storage, pumping etc)	855	427	473	395	395	2,545
O&M of infrastructure	474	474	474	474	474	2,370
Purchase of Temporary Water Rights	2,200	-	-	-	-	2,200
Total cost (=allowable explanation of Variance from Target BAU Opex)	7,080	3,574	4,498	2,665	2,665	20,483
Implied Adjustment to Water Plan Opex	3,335	(1,318)	(1,542)	(1,080)	(1,080)	(1,684)

The review team has assessed the revised costs proposed by CHW (**Table 6-8**). The outcomes of this assessment are indicated in **Table 6-9**. The review team has formed a slightly different view on some issues:

- The electricity costs have been adjusted to reflect the consistent view applied to all water businesses as outlined in **Section 3.2.1** that the real increases in electricity costs should 12% (2008/09) and 15% in all other years, relative to 2006/07 costs – compared with 19% proposed by CHW;
- A reduction in operations and maintenance charges in the first three years to \$360K p.a, (being approximately 2% of the capital cost of the project). The review team has not sighted the details of the basis of the PJB Associates cost estimate but considers it broadly more reasonable than initially indicated by considers that for the first three years the appropriate expenditure provision (for regulatory pricing purposes) for the length of pipeline and the three pump stations proposed is approximately \$360 p.a., based on the operations and maintenance costs of comparable infrastructure (including large pipelines and pumping stations) in their early years of operation. The review team also notes that these assets are new and some of the costs will be within the constructor’s defects liability period (at least for the early part of the second regulatory period). The review team has adopted the PJB Associates estimate for the last two years of the period.
- A minor reduction in GMW charges in 2008/09 noting that the amount proposed by CHW is an estimate.

The review team considers that the proposal to purchase temporary water rights is reasonable and that the unit cost used is reasonable and prudent (being consistent with the average price for recent

trades over the last 6 months). The review team also considers that the assumed annual delivery volumes are reasonable in the context of water rights held (understood to be 11,000ML) and the proposed purchase of temporary water rights in 2008/09.

■ **Table 6-9: Expenditure breakdown for Goldfields Superpipe (Ballarat Link) - Review Team Assessment Outcomes**

Description	Forecast Incremental Expenditure wrt 2006/07 (\$ 000 - real Jan 2007)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Volume delivered (ML)	10,000	7,500	10,000	5,000	5,000	37,500
Coliban Water Charges (Waranga - Sandhurst)						
Fixed	42	42	42	42	42	211
Variable	130	100	133	67	67	496
Pumping	1,032	794	1,059	530	530	3,944
Electricity for pumping	2,141	1,649	2,199	1,099	1,099	8,186
GWM Water charges (Water rights, storage pumping etc)	800	427	473	395	395	2,490
O&M of infrastructure	360	360	360	474	474	2,028
Purchase of Temporary Water Rights	2,200	-	-	-	-	2,200
Total cost (=allowable explanation of Variance from Target BAU Opex)	6,705	3,372	4,266	2,606	2,606	19,555
Proposed Adjustment to Water Plan Opex	2,960	(1,521)	(1,774)	(1,139)	(1,139)	(2,612)

In summary, the review team considers that for the Goldfields Superpipe (Ballarat Link) operating costs:

- The amount justifiable as contributing to the Variance from Target BAU Opex is \$19,555K in aggregate over the regulatory period (second last line **Table 6-9**);
- The adjustments that should be made to CHW's Water Plan Opex is a reduction in operating costs of \$2,612K in aggregate over the regulatory period (last line, **Table 6-9**). These annual adjustments are transferred to the adjustments table in **Section 6.3**.

6.2.4 Maintaining Service Standards

The total cost put forward by Central Highlands Water for this item totals \$9.76M which accounts for about 19% of Central Highlands Water's explanation of the variance. The breakdown of these costs is summarised in **Table 6-10**.

■ **Table 6-10: Breakdown of “Additional” Forecast Cost for Maintaining Service Standards submitted by Central Highlands Water**

Description	Forecast Incremental Expenditure wrt 2006/07 (\$ 000 - real Jan 2007)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
GIS and asset management software costs	44	64	73	85	101	367
CCTV and sewer monitoring	266	263	261	203	259	1,253
Water storage condition assessment	-	25	-	-	25	50
UAW modelling	194	82	131	14	98	491
CCTV Licences	27	27	27	27	27	135
Drought response for water bursts etc.	571	590	611	599	612	2,982
Consultants - Cathodic protection	92	105	132	162	190	679
Chemicals	-	40	40	40	40	160
Consultants - Asset condition assessments	100	65	164	144	137	609
Technical Officer - waste load mangement	62	63	64	65	66	319
Ballarat South licence compliance	272	253	214	202	207	1,149
Lagoon desludging	-	183	825	561	-	1,568
Total	1,627	1,760	2,540	2,072	1,763	9,762

The basis and justification of these costs as submitted by Central Highlands Water is presented in **Appendix B**.

While all the activities are prudent to undertake, the review team considers that a reduction in the total quantum of expenditure on these activities seems appropriate from a business efficiency viewpoint while still meeting business obligations and objectives. The review team notes that the justification for the expenditure was more qualitatively, rather than quantitatively, based. The review team considered that from a business efficiency viewpoint that some measure of containment of costs could be achieved by appropriate trade-offs within the business. The review team generally did not see compelling evidence to support the levels of expenditure proposed (as being above BAU) even though individual activities were appropriate.

Examples of items considered soundly based were:

- **Lagoon desludging:** further information on the supporting strategy and costs for desludging of lagoons has been provided and these costs are considered reasonable and prudent.
- **Chemicals** – for odour and corrosion control.

■ **Table 6-11: Breakdown of Additional Costs for Maintaining Service Standards: Review Team Proposal**

Description	Forecast Incremental Expenditure wrt 2006/07 (\$ 000 - real Jan 2007)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
GIS and asset management software costs	44	44	66	66	88	308
CCTV and sewer monitoring	240	240	240	240	240	1,200
Water storage condition assessment	-	-	-	-	-	-
UAW modelling	194	82	131	(14)	98	491
CCTV Licences	27	27	27	27	27	135
Drought response for water bursts etc.	571	500	450	300	250	2,071
Consultants - Cathodic protection	92	105	132	162	190	679
Chemicals	-	40	40	40	40	160
Consultants - Asset condition assessments	100	65	164	144	137	609
Technical Officer - waste load management	allowed for under labour provision - Section 6.2.2					-
Ballarat South licence compliance	204	190	161	151	156	861
Lagoon desludging	-	183	825	561	-	1,568
Total	1,471	1,475	2,234	1,676	1,226	8,083

The review team has proposed reductions in the following items:

- ***Drought response for water bursts etc.:*** CHW has stated that bursts for water mains will increase at 15% p.a. during the period and sewer blockages at 20% p.a. but has not provided any compelling quantitative evidence to support this position and justify the costs. The review team also notes that CHW does not appear to be significantly different from the other water businesses who have primarily managed this within their normal business activities. For regulatory purposes the review team considers that some improvement over time should occur (either because of the level of upfront effort, and/or because conditions and the impact on network performance will stabilise and/or “drought” conditions will abate). It is also unclear how much of this should be considered BAU or as part of the long term expenditure base. Consequently the review team considers prudent expenditure would involve that nominated by CHW initially but reducing over time as indicated in **Table 6-11**.
- ***Ballarat South licence compliance:*** This apparently involves a plethora of minor works for maintenance and operations purposes. The general perception that the review team formed was that in the absence of solid supporting quantitative justification for the expenditure levels that some reasonably significant reduction was required. Normally these costs would be comprehended within internal business prioritisation processes and would normally be

considered BAU. Consequently the review team proposes a 25% reduction for regulatory pricing purposes and as prudent expenditure in assessing the Variance from Target BAU Opex.

- **Water storage condition assessment** is considered as not contributing to the justification of the Variance from Target BAU Opex as it could be reasonably considered as BAU and/or covered by the growth adjusted Target BAU Opex. and/or part of the normal swings and roundabouts of variations in operating expenditure from year to year. Such costs are either not material and/or are covered by the allowance for growth and are not considered as justified for inclusion as part of the explanation of the Variance from Target BAU Opex over the regulatory period.

The review team considers that there should be some opportunity for rationalising or optimising the costs but did not sight enough evidence to form a view either way and so proposes no adjustment to the expenditure indicated by CHW:

- **Total quantum of CCTV and sewer monitoring:** The review team considers these costs broadly prudent and reasonable and was satisfied that they were separate from and not included in the sewer repair costs. Typical costs for such work on other large contracts would be approximately \$5 to \$6 per metre. Assuming that CHW will continue to do at least approximately 25 km of sewer per year over the next 5 years this equates to approximately \$120K to \$144k p.a. The review team considers that CHW should accelerate this rate so that it has a greater proportion of its system assessed. The review team considers prudent expenditure to be \$240K p.a.;
- **Consultants - Asset condition assessments:** On the basis of other experience these costs are normally included in the above (i.e. CCTV work outputs) and included in those costs. On this basis prima facie there should be some rationalisation of these costs supporting information is requested to justify the costs indicated;
- **UAW modelling;**
- **Consultants - Cathodic protection;**
- **GIS and asset management software costs;**
- **CCTV Licences.**

Technical Officer - waste load management – This item is dealt with elsewhere (refer **Section 6.2.2**).

In summary, the review team considers that the maximum amount that should be considered as justifying the Variance from Target BAU Opex is \$8083K in aggregate over the 5 year regulatory period.

6.2.5 Water Augmentation Projects

The total cost put forward by Central Highlands Water for this item totals \$7.33 million which accounts for about 14% of Central Highlands Water's explanation of the Variance from Target BAU Opex.

Central Highlands Water provided a breakdown of the costs associated with operation of new water augmentation projects.

■ **Table 6-12: Breakdown of Additional Costs for Water Augmentation Projects – CHW View**

Description	Forecast Incremental Expenditure wrt 2006/07 (\$ 000 - real Jan 2007)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Salaries for demand reduction team	(95)	(95)	(95)	(95)	(95)	(473)
Demand reduction program	(352)	(352)	(352)	(352)	(352)	(1,758)
WDM customer education	38	38	38	38	38	189
Staff for unaccounted for water program	384	372	334	297	368	1,755
Team leader for unaccounted for water program	62	63	64	65	66	319
Meter reading program						
Power for reuse schemes at Maryborough and Daylesford	169	169	167	167	167	839
Pumping costs for Ballarat West groundwater scheme	13	28	28	33	33	136
Power for new pumpstations	24	24	24	24	24	120
Pumping costs - new water resources	283	294	305	305	305	1,492
Increased pumping from Tullaroop	144	144	144	144	144	718
BOOT: increased operating costs (water restrictions easing)	176	196	216	236	256	1,078
Increased repairs and maintenance	165	235	240	281	350	1,271
Newlyn bulk water charges from GMWater	82	91	101	111	122	507
Blackwood water supply - water cartage	50	50	50	50	50	250
O&M of new water resource monitoring sites	50	50	50	50	50	250
New staff - water treatment officer	120	123	127	131	134	635
Total	1,312	1,430	1,441	1,484	1,660	7,328

The basis and justification of these costs as submitted by Central Highlands Water is presented in **Appendix B**.

The review team's assessment of the costs put forward by CHW is summarised in **Table 6-13**. The review team considers that the items identified in **Table 6-13** are reasonable and prudent as justifying the Variance from Target BAU Opex.

The review team notes that a number of these items have been previously considered in **Section 6.2.1** (electricity costs for pumping) and in the labour costs in **Section 6.2.2** (for new personnel resources proposed above).

■ **Table 6-13: Breakdown of Additional Costs for Water Augmentation Projects: Review Team Proposal**

Description	Forecast Incremental Expenditure wrt 2006/07 (\$ 000 - real Jan)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Salaries for demand reduction team	(95)	(95)	(95)	(95)	(95)	(473)
Demand reduction program	(352)	(352)	(352)	(352)	(352)	(1,758)
WDM customer education	38	38	38	38	38	189
Staff for unaccounted for water program	Allowed for in labour costs in Section 6.2.2					-
Team leader for unaccounted for water program						-
Meter reading program	-	-	-	-	-	-
Power for reuse schemes at Maryborough and Daylesford	169	169	167	167	167	839
Pumping costs for Ballarat West groundwater scheme	Costs allowed for in Section 6.2.1					-
Power for new pumpstations						-
Pumping costs - new water resources						-
Increased pumping from Tullaroop						-
BOOT: increased operating costs (water restrictions easing)	176	176	176	176	176	878
Increased repairs and maintenance	165	235	240	281	350	1,271
Newlyn bulk water charges from GMWater	82	91	101	111	122	507
Blackwood water supply - water cartage	-	-	-	-	-	-
O&M of new water resource monitoring sites	50	50	50	50	50	250
New staff - water treatment officer	Allowed for in labour costs in Section 6.2.2					-
Total (Preliminary view of review team)	233	313	325	376	456	1,703
Total (as explained by Central Highlands Water)	1,312	1,430	1,441	1,484	1,660	7,328
Difference	(1,080)	(1,118)	(1,116)	(1,108)	(1,204)	(5,625)

The other items are not considered as contributing to the justification of the Variance from Target BAU Opex as they could be reasonably considered as BAU and/or covered by the growth adjusted Target BAU Opex. and/or part of the normal swings and roundabouts of variations in operating expenditure from year to year and/or are not material in the sense that they would be absorbed or addressed through normal prudent business measures, trade-offs and prioritisation processes and/or are not significant expenditure items. It would be inappropriate to include these items *as additional to BAU* in the regulatory Opex base for pricing purposes.

Note, like some of the items in the immediately preceding sections, the review team is not suggesting that the activities are not reasonable, prudent or inappropriate but rather that the level of expenditure could be considered and managed differently within the business for the purposes of managing expenditure (and therefore price impacts). The lists put forward give the impression of a long list of activities that are desirable but not necessarily essential to do (at least not all at the same time or within the regulatory period).

One specific example of this is the Blackwood Water Supply where measures are to be introduced within a year to eliminate the need for water carting (and therefore is BAU).

Further clarification is still required on the “BOOT increases for easing of water restrictions”. This could be resolved between the draft and final pricing determination.

6.2.6 New Regulations

The total cost put forward by Central Highlands Water for this item totals \$5.50 million in aggregate over the 5 year regulatory period which accounts for about 10% of Central Highlands Water’s explanation of the Variance from Target BAU Opex. The breakdown of these costs is summarised in **Table 6-14**.

■ **Table 6-14: Breakdown of “Additional” Forecast Cost for New Regulations - submitted by Central Highlands Water**

Description	Forecast Incremental Expenditure wrt 2006/07 (\$ 000 - real Jan 2007)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water resources officer	1	2	3	4	5	16
Water treatment officer (50%)	31	31	32	32	33	160
Sustainability officer	48	49	49	50	51	247
Records management officer	36	130	129	159	164	617
Consultant - records management	(36)	(6)	(6)	(36)	(36)	(120)
Software - records management	66	66	66	99	99	396
Water tank cleaning with divers	115	115	115	115	115	577
Consultant - spill tables		37			37	74
SDWA- audit fees	14	24	24	34	34	131
Consultant - SDWA	14	9	14	4	24	67
Consultant - OH&S	39	44	49	54	54	240
SDWA - training	9	9	9	9	9	45
Security (CCTV, fencing etc.)	36	64	80	88	94	362
Consultant - Drought Response Plan Review	(13)	9	73	74	76	218
Reservoir modelling (DYRESM etc.)	199	189	199	209	209	1,005
Stream gauging		19	19	19	19	76
Security - patrols etc.	18	18	18	18	18	92
Reuse officer plus vehicle	105	107	110	112	114	548
Consultant - Sustainability and domestic waste	5	5	5	25	10	50
Consultant - Biodiversity site assessments	116	76	95	53	52	392
Waterway protection	(69)	(61)	(65)	(64)	(65)	(325)
Trade waste analysis	19	28	37	47	59	190
Biosolids management	75	145	75	75	75	445
Total	830	1,111	1,131	1,182	1,251	5,505

The basis and justification of these costs as submitted by Central Highlands Water is presented in **Appendix B**.

The preliminary view of the review team of the costs contributing to the explanation of the Variance from Target BAU Opex is summarised in **Table 6-15**.

While prima facie all the activities are prudent to undertake, the review team considers that a reduction in the total quantum of expenditure on these activities or absorption of them into normal business operations seems appropriate and prudent from a business efficiency viewpoint while still meeting business obligations and objectives. The review team notes that the justification for the expenditure was more qualitatively, rather than quantitatively, based. The review team considered



that from a business efficiency viewpoint that some measure of containment of costs could be achieved by appropriate trade-offs within the business. The review team generally did not see compelling evidence to support the levels of expenditure proposed (as being above BAU) even though individual activities were appropriate.

■ **Table 6-15: Breakdown of Additional Forecast Costs for New Regulations: Review Team Proposal**

Description	Forecast Incremental Expenditure wrt 2006/07 (\$ 000 - real Jan 2007)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water resources officer						-
Water treatment officer (50%)		Allowed for in in labour considerations - Section 6.2.2				-
Sustainability officer	-				-	-
Records management officer	-				-	-
Consultant - records management						-
Software - records management	66	66	66	99	99	396
Water tank cleaning with divers	115		115	-	115	346
Consultant - spill tables	-	-	-	-	-	-
SDWA- audit fees	-	-	-	-	-	-
Consultant - SDWA	-	-	-	-	-	-
Consultant - OH&S	-	-	-	-	-	-
SDWA - training	-	-	-	-	-	-
Security (CCTV, fencing etc.)	36	64	80	88	94	362
Consultant - Drought Response Plan Review	-	-	-	-	-	-
Reservoir modelling (DYRESM etc.)		189			209	398
Stream gauging	-	-	-	-	-	-
Security - patrols etc.	-	-	-	-	-	-
Reuse officer plus vehicle	-	Allowed for in labour considerations				-
Consultant - Sustainability and domestic waste	-	-	-	-	-	-
Consultant - Biodiversity site assessments		76	95			171
Waterway protection						-
Trade waste analysis	-	-	-	-	-	-
Biosolids management	75	145	75	75	75	445
Total	292	540	431	262	593	2,118

The review team considers that the items identified in **Table 6-15** are reasonable and prudent as justifying the Variance from BAU Opex. These include water tank cleaning with divers, Biodiversity site assessments and biosolids management.

The personnel resources items are considered in **Section 6.2.2**.

The other items are not considered as contributing to the justification of the Variance from Target BAU Opex as they could be reasonably considered as BAU and/or covered by the growth adjusted Target BAU Opex. and/or part of the normal swings and roundabouts of variations in operating expenditure from year to year and/or are not material in the sense that they would be absorbed or addressed through normal prudent business measures, trade-offs and prioritisation processes and/or are not significant expenditure items. It would be inappropriate to include these items *as additional to BAU* in the regulatory Opex base for pricing purposes.

Note, like some of the items in the immediately preceding sections, the review team is not suggesting that the activities are not reasonable, prudent or inappropriate but rather that the level of expenditure could be considered and managed differently within the business for the purposes of managing expenditure (and therefore price impacts). The lists put forward give the impression of a long list of activities that are desirable but not necessarily essential to do (at least not all at the same time or within the regulatory period).

6.2.7 Ballarat North Water Reclamation Plant

The total cost put forward by Central Highlands Water for this item totals \$5.42 million in aggregate over the regulatory period which accounts for about 10% of Central Highlands Water’s explanation of the variance.

The components of this cost are:

- The Central Highlands Water Opex costs (5%);
- BOOT Costs for the operation of the works (90%);
- Contract management costs (5%).

The review team is satisfied that the approximately \$900K increase is largely associated with an increase in the toll payment between 2006/07 and 2008/09 and is a contractual commitment that reflects the increase in toll payable for operation of the new plant following its completion in the current calendar year. No adjustment to the quantum or timing of expenditure is proposed.

6.2.8 Country Towns Water and Sewer Projects

The total cost put forward by Central Highlands Water for this item totals \$3.91 million which accounts for about 7% of the explanation of the variance.

A description of the background of these projects is provided in **Section 5.2.2. This discussion indicates that there will most likely be delays in the schemes.**

A breakdown of the additional costs envisaged by Central Highlands Water is provided in **Table 6-16. NOTE: The review team wishes to clarify and confirm that Central Highlands Water intends to deliver these schemes through BOOT arrangement.**

■ **Table 6-16: Breakdown of Additional Costs for Country Towns Projects: CHW Proposal**

Description	Forecast Incremental Expenditure wrt 2006/07 (\$ 000 - real Jan 2007)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
BOOT tolls to operate new WWTPs	-	220	440	440	440	1,541
BOOT tolls to operate new WTPs	-	123	247	247	247	864
Power for Avoca pumping	-	146	146	146	146	584
Power for Landsborough pumping	150	150	150	150	150	748
Consultants - Contract Management	-	25	50	50	50	174
Total	150	664	1,033	1,033	1,033	3,912



Central Highlands Water advises that the basis of expenditure estimates for each of the line items in the above table is as follows:

- **BOOT Tolls to operate new WWTPs** - Based on estimates of the current operational costs of similar small town treatment plants (eg. Skipton). These estimates were used in the business case presented to DTF. Covers both the treatment plant operation costs and reticulation pumping costs.
- **BOOT Tolls to operate new WTPs** - Based on estimates of the current operational costs of similar small town treatment plants. These estimates were used in the business case presented to DTF. Covers both the treatment plant operation costs and reticulation pumping costs.
- **Power for Avoca pumping** - Power for additional pumping, separate to the operational costs of the PPP. Based on consultants (GHD) analysis for the assumed treatment plant solution and volumes.
- **Power for Landsborough pumping** - Power for pumping & operation of desalination plant, separate to the operational cost of the PPP. Based on consultants (GHD) analysis for the assumed treatment plant solution and volumes.
- **Consultants – Contract management** - Contract management costs for the new PPP schemes. Based on the business case submitted to DTF.

In forming its assessment the review team notes that:

- It has not assessed these costs in detail because of the uncertainty surrounding the method of delivery and what and how the operational costs will be incurred (as tolls or other).but considers them to be reasonable.
- The power costs have been provided for in **Section 6.2.1**.
- The date on which the operational costs will be incurred has been delayed consistent with the timing view in the capex section (**Section 5.2.2**).
- This issue should be resolved during the draft and final pricing determination stage.

For the time being the review team has provided for expenditure as indicated in **Table 6-17**.

- **Table 6-17: Breakdown of Additional Costs for Country Towns Projects: Review Team Proposal**

Description	Forecast Incremental Expenditure wrt 2006/07 (\$ 000 - real Jan 2007)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
operational costs of new WWTPs	-	-	-	220	220	440
Operational costs of new WTPs	-	-	-	123	247	370
Power for Avoca pumping	-	-	-	-	-	-
Power for Landsborough pumping	-	-	-	-	-	-
Consultants - Contract Management	-	-	-	25	50	75
Total	-	-	-	368	517	885

6.2.9 Credit Management (\$0.61 million)

The additional costs are for 1 FTE plus on-costs in 2008/09, increasing to 2 FTEs in 2009/10.

The review team considers that the costs of additional staff employed for credit management should be offset by improvements in overall productivity and that these costs do not form part of the explanation of the Variance from target BAU Opex. These have also been considered as part of new labour costs in **Section 6.2.2**.

6.2.10 State Tariff Levy (\$0.6 million)

State Tariff levies does not form part of the “Variance from target BAU Opex”. This item is to be evaluated by the ESC.

6.2.11 Summary

Table 6-18 summarises the review team’s view of the items put forward by Central Highlands Water (**Table 6-3**) to explain and justify the positive Variance from Target BAU identified in **Table 6-2**.

Based on the discussion as outlined in **Sections 6.2.1** to **6.2.10**, the review team’s preliminary views on the items put forward by Central Highlands Water as justifying the Variance from Target BAU Opex in the five years of the regulatory period is summarised in **Table 6-18** below.

The review team notes that:

- The sum of the new/additional expenditure associated with the items put forward by Central Highlands Water as justifying the Variance from Target BAU Opex exceed a full explanation of the Variance in each year of the second regulatory period and by \$ 2.32 million in aggregate. [Refer **Table 6-3**].
- Based on its preliminary assessment, the review team considers that sum of the increased operational expenditure for the items indicated by Central Highlands Water as justifying the Variance from Target BAU Opex is \$50.567M in aggregate over the regulatory period. This falls short of a full justification of the Variance from Target BAU Opex by \$1.057M in aggregate over the period.

The implication of this is that the target productivity improvement of 1% per annum (after growth) specified by the ESC will not be achieved in the regulatory period.

Consequently a small productivity adjustment is required. This is identified as \$220K p.a. and is identified in **Table 6-19**.

■ **Table 6-18: Review Team's Assessment of CHW's Explanations of Variance from Target BAU Opex**

Description	Forecast Expenditure (\$ 000 - real Jan 2007)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Electricity (excluding Superpipe, including real cost increases)	961	1262	1335	1574	1575	6,707
Labour	749	1057	1294	1456	1540	6,096
Goldfields Superpipe (including electricity)	6,705	3,372	4,266	2,606	2,606	19,555
Maintaining Service Standards	1,471	1,475	2,234	1,676	1,226	8,083
Water Augmentation Projects	233	313	325	376	456	1,703
New Regulations	292	540	431	262	593	2,118
Ballarat North Water Reclamation Plant	1,128	1,143	1,006	1,016	1,126	5,419
Country Towns (excluding electricity allowed in Line 1)	-	-	-	368	517	885
Credit management	-	-	-	-	-	-
State tariff levy	-	-	-	-	-	-
Total	11,539	9,161	10,893	9,335	9,639	50,567
Variance from Target BAU Opex	8,277	10,729	12,785	10,034	9,799	51,624
Difference (Requiring Explanation)	3,262	(1,568)	(1,892)	(699)	(160)	(1,057)

6.3 Recommendations

Table 6-19 outlines the preliminary recommendation on proposed changes in Central Highlands Water's Water Plan Opex for the regulatory period.

[NB: **Table 6-19** is on the following page.]

Adjustments for the Change Items 1 to 3 are to made regardless. However the net adjustments (after the productivity adjustment is included) should not and does not exceed in aggregate the "Difference Requiring Explanation" outstanding (the last line in Table 6-18).



■ **Table 6-19: Preliminary Recommendations on Changes to Central Highland Water's Proposed Operational Expenditure for Regulatory Purposes**

Change Item	Item/Description	Forecast	\$M				
			2008-09	2009-10	2010-11	2011-12	2012-13
1	Goldfields Superpipe [including electricity]	Original Water Plan:	3.745	4.892	6.040	3.745	3.745
		Recommended Revised:	6.705	3.372	4.266	2.606	2.606
		Recommended Net Change:	2.960	-1.520	-1.774	-1.139	-1.139
2	Electricity - real cost increases only, i.e. not total electricity costs (excluding Superpipe)	Original Water Plan:	0.000	0.000	0.000	0.000	0.000
		Recommended Revised:	0.281	0.382	0.455	0.494	0.495
		Recommended Net Change:	0.281	0.382	0.455	0.494	0.495
3	Labour - Net real cost increases (incl'g base, new positions) [NB: across all activities]	Original Water Plan:	0.000	0.000	0.000	0.000	0.000
		Recommended Revised:	-0.087	0.000	0.136	0.193	0.089
		Recommended Net Change:	-0.087		0.136	0.193	0.089
4	Additional "Productivity" Contribution [to achieve ESC specified minimum productivity improvement of 1% pa (after growth)]	Original Water Plan:	0.000	0.000	0.000	0.000	0.000
		Recommended Revised:	-0.220	-0.220	-0.220	-0.220	-0.220
		Recommended Net Change:	-0.220	-0.220	-0.220	-0.220	-0.220
Total Recommended Net Change:			\$ 2.93	\$ (1.36)	\$ (1.40)	\$ (0.67)	\$ (0.78)
Original Water Plan Total Regulatory Opex:			\$ 43.23	\$ 45.82	\$ 48.06	\$ 45.51	\$ 45.47
Recommended Revised Total Regulatory Opex:			\$ 46.16	\$ 44.46	\$ 46.66	\$ 44.84	\$ 44.69

References

- 1) Australian Government, Department of Climate Change, 2008, *National Greenhouse Accounts (NGA) Factors*, January 2008.
- 2) ANCOLD, 2003, *Guidelines on Risk Assessment*, October 2003.
- 3) ANCOLD, 2000a, *Guidelines on Selection of Acceptable Flood Capacity for Dams*, March 2000.
- 4) ANCOLD, 2000b, *Guidelines on Assessment of the Consequences of Dam Failure*, May 2000.
- 5) Essential Services Commission, 2005, *Water Price Review: Metropolitan and Regional Businesses' Water Plans 2005-06 to 2007-08: Final Decision*, June 2005.
- 6) Environmental Protection Agency, 2006, *Principles to Establish EPA Environmental Obligations for Water Businesses for the 2008-2013 Pricing determination*, EPA Publication 1069, November 2006.
- 7) Central Highlands Water, 2007, *Beaufort WWTP: Decommission and New WWTP*, CHW Project Definition Document, 10 January 2007.
- 8) Central Highlands Water, 2007, *Replace Raw Water Pipelines*, CHW Project Definition Document, 30 January 2007.
- 9) Central Highlands Water, 2007, *Beaufort Wastewater Treatment Plant: Refurbishment and Upgrade Plan*, January 2007.
- 10) Central Highlands Water, 2007, *Ballarat South: Wastewater Treatment Plant Review*, January 2007.
- 11) Central Highlands Water, 2007, *Upgrade of Ballarat South Trunk Sewer: Summary Sheet item for Information*, Undated (2007).
- 12) Central Highlands Water, 2007, *Water Supply Demand Strategy: Ballarat and District Water Supply System: Strategic Plan 2006-2055*, Undated (2007).
- 13) Central Highlands Water, 2007, *Water Supply Demand Strategy: Blackwood Water Supply System: Strategic Plan 2006-2055*, Undated (2007).

- 14) Central Highlands Water, 2007, *Water Supply Demand Strategy: Landsborough and Navarre Water Supply System: Strategic Plan 2006-2055*, Undated (2007).
- 15) Central Highlands Water, 2007, *Water Supply Demand Strategy: Maryborough Water Supply System: Strategic Plan 2006-2055*, Undated (2007).
- 16) Central Highlands Water, 2007, *Water Supply Demand Strategy: Avoca Water Supply System: Strategic Plan 2006-2055*, Undated (2007).
- 17) Central Highlands Water, 2007, *Water Supply Demand Strategy: Waubra Water Supply System: Strategic Plan 2006-2055*, Undated (2007).
- 18) Central Highlands Water, 2007, *Dam Improvement Program: 2007 – 2014*, June 2007.
- 19) Central Highlands Water, 2007, *Water Plan: 2008 - 2013*, October 2007.
- 20) Central Highlands Water, 2007, *Sewer Collection Replacement Plan*, November 2007.
- 21) Central Highlands Water, 2007, *Water Distribution Replacement Plan*, November 2007.
- 22) Central Highlands Water, 2008, *Expressions of Interest Brief: Country Towns Water Supply and Sewerage Program*, March 2008.
- 23) GHD, 2006a, *Preliminary Report for Blackwood / Barry's Reef / Simmon's reef / Golden Point Sewerage Scheme*, Report for Central Highlands Water, July 2006.
- 24) GHD, 2006b, *Ballarat Sewer Flow Containment Program: Ballarat South Outfall Sewerage Concepts Report*, Report for Central Highlands Water, September 2006.
- 25) GHD, 2006c, *Report for Alternative Water Supply Options for Landsborough / Navarre: Final Report*, Report for Central Highlands Water, October 2006.
- 26) GHD, 2006d, *Report for Ballarat South Wastewater Treatment Plant: Process Management Plan*, Report for Central Highlands Water, October 2006.
- 27) GHD, 2007a, *Report for Landsborough / Navarre: Water Treatment Plant Concept Design*, Report for Central Highlands Water, March 2007.
- 28) GHD, 2007b, *Report for Beaufort Wastewater Reuse Scheme: Wastewater Treatment Plant- Consolidation Report*, Report for Central Highlands Water, June 2007.
- 29) Marsden Jacob, 2007, *Business Case: Country Towns Water and Sewerage*, (Draft), 30 May 2007.



- 30) Sinclair Knight Merz, 2004, *Expenditure Forecast Review for the Victorian Regional Urban Water Businesses: Final Report – Recommendations on Expenditure Forecasts*, 13 December 2004
- 31) Water Services Association of Australia, 2007, *National Performance Report, 2005-06: Major Urban Water Utilities*.

Appendix A Futures Price of Electricity

Article from the Australian Financial Review of 16th January 2008.

Electricity futures lose some spark

Stephen Wisenthal

Queensland electricity futures prices have slumped more than 35 per cent in the past three months, increasing the opportunities for power retailers to vie for customers in a market that opened to competition last July.

Utilities, including NSW government-owned EnergyAustralia, CLP Holdings-owned TRUenergy and several smaller companies that had been planning to enter the Queensland market, scaled back or abandoned their plans as the cost of locking in electricity prices soared last year.

But summer rain in south-east Queensland has started refilling dams, reducing the chances that power plants will have to cut output because they cannot get enough water for cooling.

This has reduced the risk of power shortages, while electricity demand has dropped due to low summer temperatures.

The spot electricity price in Queensland has averaged \$39.45 a megawatt hour so far this month.

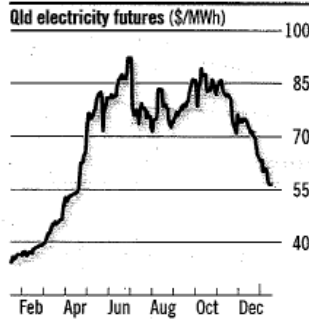
Contracts on the Sydney Futures Exchange that lock in Queensland power prices for all of 2008 rose as high as \$92 a megawatt hour in June, three times their price at the beginning of last year, as dam levels fell toward 17 per cent.

But they have fallen to \$56.24 a megawatt hour this week.

Power price futures for Victoria and NSW have also declined from their mid-2007 peaks, but have not dropped as steeply as Queensland prices.

The cost of locking in prices for 2008 in NSW is \$54.62 a megawatt

Sparking interest



SOURCE: D-CYPHATRADE.COM.AU

hour, while Victorian 2008 futures are \$56.72 a megawatt hour.

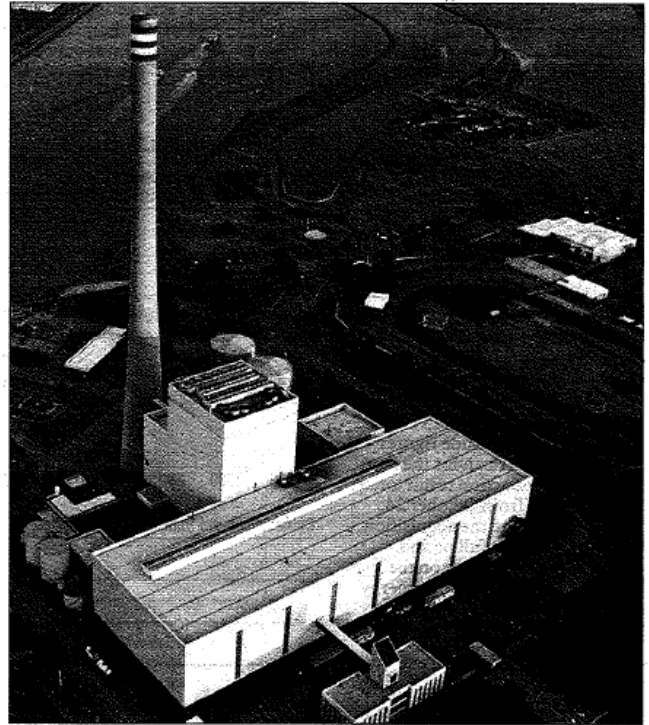
South Australian futures have bucked the trend, amid concern about generation capacity, rising to \$81.55 a megawatt hour this week, from \$45 a megawatt hour a year ago.

The slump in Queensland wholesale power prices increases the margins that are available to retailers.

AGL Energy and Origin Energy each spent \$1.2 billion last year to buy power retailers from the Queensland government.

They have each said they have hedged their electricity price exposure this year, although AGL's profit downgrade last year included a \$12 million reduction in earnings because of lower margins on sales to retail customers.

But the 18 per cent annual rate of "churn", or changing of supplier, by Queensland retail customers in December, indicates the state's market is becoming more attractive to utilities.



Low summer temperatures have reduced Queensland electricity demand. Photo: JAMES DAVIES

"Churn is a sign that there is more margin available," UBS analyst David Leitch said.

This was likely to bring back some of the big retailers that avoided Queensland when full competition started, he said.

But the tough credit market could hamper the efforts of smaller groups to gain the loan guarantees they needed.

Origin and AGL are both working to increase the proportion of their electricity sales that they generate themselves. Origin is spending \$1.3 billion to build a

630 megawatt power station near Dalby, fuelled by gas from its coal-seam methane fields.

And AGL has locked in electricity supply from a power plant that Queensland Gas is building on its coal-seam methane fields.

This reflects the longer-term outlook for rising electricity prices, as costs of fuel and new power plants increase.

"Some of the heat has gone out of the market," Mr Leitch said. "Over a three to five-year view there is still a lot of cost pressure on the generating sector."

Financial Review 16 January 2008



Appendix B Explanation and Breakdown of the Variance to BAU Opex

Goldfields Superpipe

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Justification	Basis of calculation
Operating costs									Operating costs for the Superpipe.	Costs are taken from the business case submitted and include GMW costs (bulk water), power and other O&M costs for both the Waranga to Sandhurst and Sandhurst to White Swan legs. Details from business case attached.
Team 45 - Ops & maint				3,745,000	4,892,000	6,040,000	3,745,000	3,745,000		
Depreciation Team 02 - 02-5100				3298686	3223289	3149846	3078297	3008586		

Country towns

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Justification	Basis of calculation
BOOT Tolls										
Team 40 - 40-4700				0	220,200	440,400	440,400	440,400	BOOT tolls to operate new WWTPs	Based on estimates of the current operational costs of similar small town treatment plants (eg. Skipton). These estimates were used in the business case presented to DTF. Covers both the treatment plant operation costs and reticulation pumping costs.
Team 54 - 54-4700				0	123,400	246,800	246,800	246,800	BOOT tolls to operate new WTPs	Based on estimates of the current operational costs of similar small town treatment plants. These estimates were used in the business case presented to DTF. Covers both the treatment plant operation costs and reticulation pumping costs.
Team 41 Power Avoca					145,972	145,972	145,972	145,972	Power for additional pumping, separate to the operational costs of the PPP	Based on GHD analysis for the assumed treatment plant solution and volumes
Team 41 Power Landsborough		35	74,685	149,685	149,685	149,685	149,685	149,685	Power for pumping & operation of desal plant, separate to the operational cost of the PPP	Based on GHD analysis for the assumed treatment plant solution and volumes
Team 54 Consultants					24860	49860	49860	49860	Contract management costs for the new PPP schemes	Based on the business case submitted to DTF
		35	74,685	149,685	664,118	1,032,718	1,032,718	1,032,718		



Consequential opex for water augmentation projects

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Justification	Basis of calculation
Demand Management										
Salaries		171,840	268,820	77,190	77,190	77,190	77,190	77,190	Team required to meet CRSWS strategy of demand reduction	4 FTE in 2007/08 reducing to 1 FTE through the Water Plan Includes the estimated costs of water audits for major customers; Project Aquarius home retrofit programme at 5,000 homes @ \$50 each; and small allowance for some funding for commercial customers
Demand Mgt Strategy Costs		351,525	70,000						Operational costs to put demand management program in place.	
Monthly billing										
Team 05 - contract metering reading			408,000						Costs to read, process and send the monthly meter reads. Key strategy in the demand management program	Based on contracted cost per meter for reading and quoted cost for outsourced printing and postage
Team 03 - postage			210,000							
Team 03 - Stationery			126,000							
Team 33 Power		107,558	90,733	120,733	135,733	135,733	140,733	140,733	Pumping cost for Ballarat West groundwater tanks - key strategy in water resource program	Based on pump sizes known and relevant kWh for the run rate of these pumps and using comparison of current bills to obtain rates.
Team 33 Advertising		11,956	4,780	49,780	49,780	49,780	49,780	49,780	Unaccounted water / demand management customer education program. Idea is to educate the customer as to how to access our services (eg stop taps, 13WATER etc) to minimise their disruptive use.	Based on the experience of advertising costs for the 13WATER campaign in 2006/07.
Team 34 Labour Hire		1,126	189,000	385,300	372,800	335,295	298,000	369,300	Additional heads / labour required for unaccounted water program, including leak detection team, plus some contractor allowance.	Based on average outdoor worker salaries, plus some contractor allowance.
Team 34 Power		0	24,000	24,000	24,000	24,000	24,000	24,000	New developer sites - allowance for growth of number of pump sites to be accounted for. Increase at average of 2-3 per year.	Based on an average size pump station cost.
Team 40 Wages				119,649	123,265	126,917	130,603	134,326	Water treatment officer to look after Ballarat West, Ballarat booster chlorination and Avoca and Landsborough projects. Water resource officer (50%) to meet challenges of climate change and drought response plans	1.5 FTE at assumed wage rate plus on-costs
Team 40 BOOT				175,541	195,541	215,541	235,541	255,541	Increased operating costs with the easing of water restrictions	Based on contracted rate for water treatment
Team 41 R&M Other		-118,022	-30,503	46,633	117,300	122,300	162,800	232,300	Increased R&M - to cover the additional water and sewer reticulation systems planned, plus the upgraded water augmentation at Tullaroop.	Based on an estimation from similar systems covered by CHW
Team 41 Power Tullaroop			143,596	143,596	143,596	143,596	143,596	143,596	Increased pumping from Tullaroop due to need to source more water from here	Based on pro rata of current volumes and pumping cost.
Team 45 Bulk Water		-3,295	140,423	78,823	88,023	97,683	107,826	118,476	Bulk water charges for Newlyn from Goulburn Murray Water	Based on a 500ML entitlement and advised expected charges from GMW of around \$220-230 per ML
Team 45 Power		-266	170,486	282,686	293,686	304,686	304,686	304,686	Pumping cost for new water resources.	In 2007/08 this relates to Ballarat system augmentation - Ballarat West bores, Newlyn connection, Bungaree bore, Cosgrave connection and aerators at White Swan & Lal Lal reservoirs. In 2008/09 the pumping costs for the Landsborough bore (to the new water treatment plant) and the new Daylesford bore, Hepburn pumping and system aeration start to kick in, with some increases in Landsborough bore pumping in later years. Energy has been costed at 15c per kWh which includes usage and distribution costs
Team 45 Water Cartage		0	50,000	50,000	50,000	50,000	50,000	50,000	To supply the town of Blackwood until new storages complete \$50k ongoing.	Based on recent history of likely costs, costed at \$12,500 per ML
Team 45 Consultants		0	0	50,000	50,000	50,000	50,000	50,000	For the operation and maintenance of new water resource monitoring sites which are required to meet bulk entitlement monitoring requirements. The information will also be used for future system modelling required for the review of WSDSs of all CHW systems.	based on current monitoring site costs.
Team 54 Power		23,813	181,874	192,766	192,766	190,766	190,766	190,766	Power for reuse schemes at Maryborough and Daylesford	Costs based on historical trends plus 1% growth allowance. Based on recent electricity market trends these costs may be understated.
Unaccounted water										
salaries Unacc Water Officer				62,000	62,930	63,874	64,832	65,805	Team leader required to run unaccounted water program	Based on average control room salary.
Sub-Total		546,236	2,047,209	1,858,697	1,976,610	1,987,361	2,030,353	2,206,498		



New Regulations

Water resource	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Justification	Basis of calculation
WSDS/water resource officer		70,000	70,000	71,050	72,116	73,197	74,295	75,410	Increased WSDS requirements of DSE, plus management of bulk entitlements and groundwater licences including new reporting, monitoring requirements etc..	1 FTE plus on-costs at assumed rate
Water treatment officer @ 50%				31,000	31,465	31,937	32,416	32,902	SDWA - new requirements of regulations including - reporting, water quality mgt system, terrorism etc	50% of 1 FTE plus on-costs at assumed rate
Sustainability officer				48,000	48,720	49,451	50,193	50,945	Responding to the sustainability focus from the SoO and the Water Act. Introducing new Sustainability management principles. Covering emerging EPA expectations including Corporate licensing, greenhouse issues, biosolids management	1 FTE plus on-costs at assumed rate
Team 14 wages		-275	72,321	35,344	130,073	128,617	158,479	163,229	Public records Act compliance	FTE to implement and manage a records mgt system
Team 14 Consultants		35,910	75,000	0	30,000	30,000	0	0	Public records Act compliance	Consultants to implement a records mgt system
Team 13 Software Maint				66,000	66,000	66,000	99,000	99,000	Public records Act compliance	Licence costs for a records mgt system
Team 34 Mains & Tank Cleaning		24,121	95,600	139,600	139,600	139,600	139,600	139,600	Compliance with SDWA. Increased Tank cleaning using divers, moving from a 5 - 6 year cycle to a 3 year cycle.	Based on standard unit rate currently incurred at the increased frequency.
Team 34 Consultants - spill tables					37,000			37,000	Spill tables - an EPA requirement	Based on a review every 3 years at the historical consultant cost experienced.
Team 36 Audit Fees		5,853	40,000	20,000	30,000	30,000	40,000	40,000	Compliance with audit requirements under SDWA	Estimate of standard audit fee, based on similar audits - OH&S, Environmental etc
Team 36 Consultants		25,434	49,843	39,843	34,843	39,843	29,843	49,843	SDWA - new drinking water quality management system - system updating, improving and reporting	Based on experience of consultants costs with current quality mgt system
Team 37 Consultants		-16,196	22,760	22,760	27,760	32,760	37,760	37,760	Ongoing maintenance of OH&S system currently being implemented	Based on experience of consultants costs with current quality mgt system
Team 40 Training		991	10,000	10,000	10,000	10,000	10,000	10,000	Training in SDWA	Allowance for several in-house training sessions run by external party.
Team 41 Security		0	0	36,000	64,000	80,000	88,000	94,000	Compliance with Terrorism Act. Relates to cyclone fencing and/or CCTV (real or fake) at regional facilities based on a risk assessment and ranking of those facilities	Costs have been taken from a GHD report commissioned in conjunction with the risk assessments and are based on standard costs for fencing and CCTV.
Team 45 Consultants		18,702	55,596	5,596	27,596	91,596	92,596	94,596	Ongoing drought investigations including DRP review, seed investigations for dam safety works and system modelling	Estimates of consultant hours based on current works.
Team 45 Water monitoring		-2,954	176,086	196,086	186,086	196,086	206,086	206,086	Additional monitoring associated with developing a better understanding of reservoir behaviour specifically in terms of hydrodynamic modelling (DYRESM and CAEDYM) and modelling water quality parameters.	Based on an extrapolation of current monitoring rates.
Team 45 Stream Gauging					18,925	18,925	18,925	18,925	Additional catchment water quality monitoring.	Based on an extrapolation of current monitoring rates.
Team 45 Security		-2,571	15,835	15,875	15,875	15,875	15,875	15,875	Compliance with Terrorism Act. Increased security costs to cover increased out of hours patrols and protection of headworks assets and reservoir water quality.	Based on an extrapolation of security rates.
Team 50 Wages			55,126	105,200	107,410	109,640	111,880	114,142	Reuse officer plus on-costs plus vehicle, to meet the regulatory requirements associated with new reuse schemes.	Costed at ATSSA plus allowance for on-costs
Team 50 Consultants		44,426	34,521	49,521	49,521	49,521	69,521	54,521	Additional technical advice to support the development and delivery of Sustainability and Domestic Waste programs	A conservative figure based on the need for external advice during the development of the sustainability and domestic waste programs
Team 51 Biodiversity Maint			8,507	116,077	75,907	95,007	52,827	51,967	Water Plan 1 program was basic and focused purely on biodiversity register maintenance as a foundation for future works. Water plan 2 program addresses the SoO requirements 24.2(b) and 22.1 to "maintain and restore natural assets" and to "support the development and implementation of any Regional Catchment Management Strategy"	Costings for contractor hours (ecologist) to conduct reference site assessment on biodiversity condition. System costings vary due to size of land asset. Information derived from the work will assist in managing asset condition. Data contained within the register will be upgraded using this and regional CMA data. Vegetation establishment costs based on a \$2-3000 per hectare range depending upon land condition. This covers site preparation including weed control and soil ripping, tree purchase, planting labour and post planting weed control.
Team 51 Waterway Protection		114,898	11,368	46,118	53,618	49,618	50,618	49,618	Water plan 2 program addresses the SoO requirements 24.2(b) and 22.1 to "maintain and restore natural assets" and to "support the development and implementation of any Regional Catchment Management Strategy"	This program consists of numerous actions, each of which has been costed in consideration of catchment risk and scope of works. Fences are costed at \$10 per linear metre. Actions were aligned with CMA strategies via an interactive workshop with the CMAs.
Team 53 Trade Waste Analysis				19,199	27,790	37,103	47,355	58,627	EPA requires all waste to be managed in accordance with the waste hierarchy. The cost increase is due to monitoring of domestic waste in support of the new domestic waste program and additional monitoring of high risk customers discharging to reuse schemes.	Additional \$20k per annum for domestic waste monitoring. Remainder relates to trade waste and the elevated risk profile due to major reuse developments (esp lake Wendouree).
Team 54 Biosolids Mgt				75,000	145,000	75,000	75,000	75,000	Removal of stockpiled biosolids as required by the EPA over Water Plan 2 and disposal of biosolids products created when desludging lagoons	Costs have been calculated based on \$45 per m3. This reflects the contract arrangements with PineGrow.
		318,339	792,563	1,148,270	1,429,305	1,449,775	1,500,269	1,569,046		



Service Standards

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Justification	Basis of calculation
Team 13 - Software		98,500	109,425	142,500	162,900	171,200	183,200	199,900	GIS & Asset management system software costs. These systems are key planks in the strategy to better understand and manage our asset base, particularly in the current environment of deteriorating performance rates.	Quoted costs for the software systems.
Team 31 R&M Other		0	261,975	265,747	263,352	260,957	203,172	259,460	CCTV & sewer monitoring. Optimising capex and outline development plans	CCTV - estimated from historic costs based on average cost per km * projected kms to monitor. Sewer monitoring - based on projection of number of kms to inspect given the institution of a monitoring program ranging from 1 in 3 years to 1 in 10 years, depending on size and criticality of system. Outline development plans - based on historic costs for towns planned to date plus some input from GHD for larger systems.
Team 31 Mains & Tank cleaning		0	0	0	25,000	0	0	25,000	Condition assessments of Water Storages and Basins. Optimising asset life and refurbishment options	Condition assessments on all the tanks and basins will be completed 1 in every 5 yrs. The assessments have been split into two groups to spread the costs and based on divers historical costs to complete condition assessments.
Team 31 Consultants		170,474	312,327	364,555	252,950	301,345	156,130	268,842	Modelling for unaccounted water and calibration of both the water and sewer models. Both outputs from modelling are used as part of outline development plans, costs cover the consultants to prepare and calibrate the model once sewer monitoring results received.	Based on historic experience of time and rates for similar work.
Team 31 Licences		-2,184	24,734	24,734	24,734	24,734	24,734	24,734	CCTV licences for SewRat or WinCam - allows us to analyse the data ourselves and reduces costs of consultants.	Licences priced with supplier.
Team 33 - R&M other		124,116	239,418	239,418	239,418	239,418	239,418	239,418	Drought response for both water bursts and sewer blockages.	Based on 2006/07 data as a base, estimates of the increased instances to maintain the ESC KPI's have been made using historic data and forward predictions. Similarly have analysed the increased costs for historic increased instances and projected this forward
Team 34 - R&M other		161	183,600	455,600	474,600	495,600	483,600	496,600	Cathodic protection and criticality assessment to maximise the life of assets	Using historic costs have worked through the likely costs for the program defined with a specialised cathodic protection consultant
Team 34 - Consultants		35,343	67,000	127,000	140,000	167,000	197,000	225,000	Odour & corrosion related - chemical dosing costs.	Based on experience of chemical dosing costs at Gregory St have estimated the need for 4 sites at this cost.
Team 41 - Consultants		-1,359	70,138	98,245	63,245	162,445	142,445	135,945	Asset condition assessments for all systems over 2010/11 to 2012/13 - links in with the completion of the AMIP & will lead to improved decision making for next Water Plan; over 2008/09 to 2012/13 allowance for technical advice on water quality issues, an area that has increased in scope with new sites recently implemented and proposed ones for this Water Plan (no in-house expertise in this area).	Asset condition assessments based on a small allowance for each system, using similar scope consultants reports as a base. Water quality consultancy based on an estimate of the time/scope requirement and experience with similar consultancies.
Team 50									Technical officer - EPA requirement to manage domestic waste load. Minimising harmful effluent inflow into treatment plants. Linked to a condition in the PPP contract for Ballarat North for CHW to manage influent to the plant to a greater degree. Also, asset protection, by-law investigations and backflow prevention etc for the Asset Management team which is driven by a compliance gap identified with the SDWA.	1 FTE plus on-costs at assumed rates
Team 54 - R&M Other Ball Sth		0	240,311	271,838	253,288	214,088	201,888	207,438	Costs reflect 100% licence compliance performance target for the ageing infrastructure, esp Ballarat South	Costs are based on recent experience, operator knowledge of required maintenance and where appropriate supplier estimates for R&M.
Team 54 - R&M Other Desludging Lagoons					182,500	824,500	561,000		Critical maintenance of lagoons to maintain compliance with EPA licence.	Costs are based on sludge density profiling, lagoon performance and recent experience.
		425,052	1,508,927	2,051,636	2,184,916	2,965,160	2,497,418	2,188,141		

Credit management and hardship

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Justification	Basis of calculation
Staff										
Team 04 - salaries				73,222	127,624	131,453	135,317	139,221	Additional debt collection & hardship FTE	1 FTE plus on-costs in 2008/09, increasing to 2 FTEs in 2009/10
Bad debt										
Team 02 - 02-5205			30,000	35,000	40,000	45,000	50,000	55,000	N/A - not included in Water Plan opex costs	
	0	0	30,000	108,222	167,624	176,453	185,317	194,221		
		0	30,000	108,222	167,624	176,453	185,317	194,221		



Ballarat Nth WWTP

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Justification	Basis of calculation
	613890								Current standard operating expense	
Team 54 Opex costs per team report		81400	99300	161500	161500	104900	104900	104900	Opex still to be incurred by CHW.	Includes EPA licence fees (\$78k), biological waste monitoring (\$34k), waste water monitoring (\$37k) and a minor amount of R&M
Team 54 BOOT costs		1197303	2090000	2090000	2100000	2120000	2130000	2140000	Escalation in BOOT tolls associated with the ramp up of the contract and the growth in customers attached to the ballarat North WWTP	Based on rates set out in the contract
Team 54 Consultants for Contract Mgt		0	78200	155000	160000	60000	60000	160000	Contract management costs. Through 2008/09 and 2009/10 this includes the development of DTF required contract mangement manual. Otherwise ongoing dealings with contractual matters including fulfilling the annual contract monitoring requirements.	Based on estimates from current PPP contracts
	613890	1278703	2267500	2406500	2421500	2284900	2294900	2404900		
Variance to current standard opex		664812.9	1653610	1792610	1807610	1671010	1681010	1791010		

State Tariff Levy

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Justification	Basis of calculation
State Tariff Levy	3,083	128,000	128,000	128,000	128,000	128,000	128,000	128,000	State tariff levy incurred	Based on CPI increases over Water Plan 1

