Expenditure Forecast Review for the Victorian Regional Urban Water Businesses

- GOULBURN VALLEY WATER
- Assessment of Water Plan Expenditure Forecasts: FINAL REPORT
- 27 March 2008

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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. Goulburn Valley 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 Goulburn Valley 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**

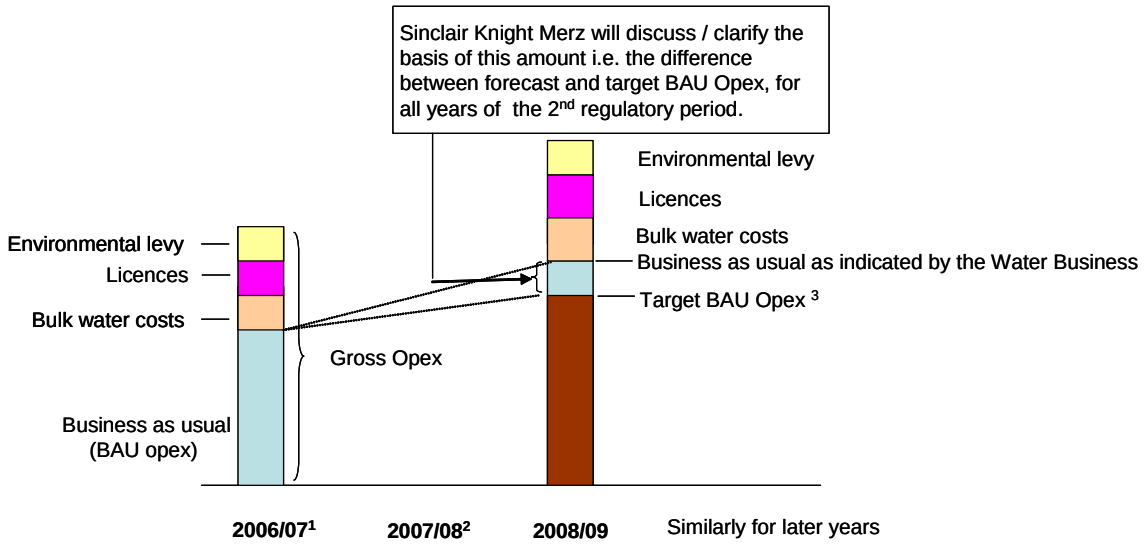
Where **A** is the Growth Adjusted Target BAU OPEX for year n;

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 Goulburn Valley 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 outs 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 with in 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**

	1st regulatory period			2nd 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 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 a different "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 that 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 CO_2 offset and renewable energy oriented providers charging between $20 and $40 per tonne of CO_2 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 CO_2. 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.

We note 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 BAU. 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 **Sections 2.1.3** and **6.1**).

3.2.7 Adjustments Principles

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

- Any expenditure that was clearly not accepted [e.g. any real increases in the businesses Water Plan electricity expenditure in excess of the electricity costs (price effects) greater than that determined as indicated in **Section 3.2.1**].
- The total of any adjustments should not result in an actual recommended regulatory expenditure in any year less than the Target BAU Opex. established as indicated in **Section 2**.

4. Goulburn Valley Water Overview

The initial approach to the review of the Water Plan expenditure forecast for Goulburn Valley 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 Goulburn Valley Water by the review team on 20 November 2007 (File Note titled "Goulburn Valley Water's Water Plan – Operating and Capital Expenditure Review");
- Further more detailed examination and investigation of the key issues through:
  - A meeting and discussion of the expenditure forecasts and key issues with relevant Goulburn Valley Water personnel on 23 November 2007.
  - Further responses and the provision of further information by Goulburn Valley Water on 13 December 2007 in response to queries arising out of the 23 November 2007 meeting.
  - Various discussions with Goulburn Valley Water personnel during late January 2008;
  - A second meeting with GVW personnel on 7 March 2008 following receipt of GVW's response to the Draft Report (letter to ESC of 21 February 2008); and
  - Further information from, and discussions with, GVW personnel after this second meeting.

4.1 Key Issues

Some of the key issues in relation to Goulburn Valley Water's expenditure forecasts are:

- Goulburn Valley Water's power contract is up for renewal from 1 July 2008. GVW has assumed no real increases in energy costs over the period. The review team's views on recent price rises and the future outlook for energy prices is outlined in **Section 3.2.1**. Goulburn Valley Water has indicated in responses to the review team that it is interested in the ESC's view of expected trends for power costs (given the ESC's familiarity with the market) to test the reasonableness of its assumptions.
- Goulburn Valley Water has proposed to employ an additional 14 staff to address consultation, water quality and asset management issues.
- GVW has a significant number of new/additional cost items (as detailed in **Table 6-3**);
- GVW is seeking an average price increase of 5.92% p.a. which is at the lower end of the spectrum of price increases being sought by the regional urban water businesses.

5. Capital Expenditure (Capex)

Error! Reference source not found. shows Goulburn Valley Water's forecast capital expenditure by cost driver and by asset category. This table is as per GVW's Water Plan submission. It does not show the impact of the Broadford Pipeline being fast tracked nor the addition of Capex for extension of its operations centre ($600K) and reclassifications of the drivers of various projects which are matters that arose in discussions with the review team and which are considered in **Section 6.2**.

- **Table 5-1: Capital Expenditure by Driver and Asset Category (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
Capital Expenditure								
Gross capital expenditure	**14.94**	**23.41**	**23.22**	**24.84**	**31.87**	**24.90**	**17.62**	**13.66**
Gross capex - business as usual	14.94	23.41	23.22	24.84	31.87	24.90	17.62	13.66
Gross capex - new obligations				-	-	-	-	-
Approved 1st period gross capital expenditure	22.13	22.27	13.91					
Average annual 1st period capex	20.52							
Average annual 2nd period capex	22.58	Annual 2nd period capex is on average 10% higher than the 1st period						
Breakdown of business as usual gross capex								
Water headworks	2.86	3.21	3.49	2.10	6.92	5.92	-	0.05
Water pipelines / network	1.26	3.47	3.61	7.19	8.29	3.73	2.93	3.40
Water treatment	2.97	3.91	5.26	5.72	4.67	4.35	7.59	2.22
Water Corporate	0.32	1.48	1.37	1.77	2.03	1.31	1.55	1.51
Water sub-total	***7.42***	***12.07***	***13.73***	***16.78***	***21.91***	***15.31***	***12.07***	***7.18***
Sewerage pipelines / network	1.84	2.91	1.76	1.68	4.38	5.65	2.89	3.16
Sewage treatment	5.11	4.40	4.41	3.60	2.89	2.63	1.13	1.15
Sewerage Corporate	0.33	1.48	1.37	1.76	2.03	1.31	1.54	1.51
Sewerage sub-total	***7.52***	***10.73***	***9.28***	***8.02***	***9.65***	***9.59***	***5.55***	***5.81***
Bulk Water sub-total	-	-	-	-	-	-	-	-
Recycled water	-	0.60	0.21	0.05	0.32	-	-	0.68
Rural Water	-	-	-	-	-	-	-	-
Breakdown of BAU gross capex by cost driver								
Renewals				8.51	10.84	10.75	7.74	7.43
Growth				9.67	16.24	10.30	4.82	3.58
Improved service				-	-	-	-	-
Compliance				4.75	2.86	1.87	3.11	0.73
Government contributions				-	-	-	-	-
Customer contributions				1.91	1.94	1.97	1.95	1.92

5.1 Deliverability of the Capex Program

Goulburn Valley Water's average annual capital expenditure across the water plan period is forecast to be $22.58M compared with actual annual average delivery of $19.2M over the first two years of the current water plan. Goulburn Valley Water's largest spend of $31.87M is planned for 2009/10. Overall the proposed size of the capital program appears consistent with what Goulburn Valley Water has previously delivered. There are no projects of a significantly greater level of technical, environmental or social difficulty or project size that prima facie should compromise

Goulburn Valley Water's capability to deliver the proposed capital program of works consistent with past performance.

Goulburn Valley 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. Goulburn Valley Water considers that the overall risk associated with the delivery of the next Water Plan will be moderately higher than the current Water Plan as:

- Over the Water Plan period it will be a challenge to retain internal resources required to deliver its program. Goulburn Valley Water is managing this risk by ensuring that the duration from project planning to delivery of new infrastructure is typically at least 2 years.
- Goulburn Valley Water has experienced a diminishing number of contractors capable of undertaking pipeline works and larger pipelines. Goulburn Valley Water also believes that there are fewer process contractors in the market for construction of treatment plants (of the size and complexity envisaged by GVW) and that there is a greater demand for contractors capable of constructing larger pipelines.

  Goulburn Valley Water is addressing this risk by packaging/bundling works where possible. It notes that most of its pipelines are of a smaller diameter and that the majority of its treatment plant upgrades have been designed to use package treatment plants, the installation of which can be directly supervised by its internal staff.
- The availability of consultants will continue to create a challenge. Goulburn Valley Water has addressed this by establishing a panel of consultants and is managing increases in consultant costs by identifying specific line items for non-standard consulting services.

Goulburn Valley Water does not believe that it can smooth its capital profile because the lumpiness in the existing spend profile is primarily due to a single project (the Broadford pipeline).

The review team considers that Goulburn Valley Water's program is well within its capacity to deliver (based on past performance) and Goulburn Valley 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. Goulburn Valley Water is already well positioned (e.g. including planning, functional design) 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

Goulburn Valley Water's Water Plan forecasts $112.89 million of capital expenditure over the regulatory period. The top six projects make up $47.34 million (approximately 42%) of this, and are listed in Error! Reference source not found..

- **Table 5-2: Key Projects Capex (Real, 1/1/07 $M)**

Capital Expenditure	1st period	SECOND REGULATORY PERIOD [$ 000's, real (1/1/07)]						*% total Capex*
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	Total	
Key projects								
Bonnie Doon WTP	100	1,440	1,200	-	-	-	**2,640**	***2%***
Broadford Pipeline	100	300	6,230	6,100	-	-	**12,630**	***11%***
Above Ground Asset Replacement	700	900	900	1,150	1,150	1,200	**5,300**	***5%***
Alexandra Eildon Pipeline	-	3,500	2,970	-	-	-	**6,470**	***6%***
Unlined Cast Iron Replacement Program	100	1,200	1,200	1,200	1,200	1,200	**6,000**	***5%***
Asset Acquisition Corporate Assets	2,600	2,600	2,700	2,700	2,700	2,700	**13,400**	***12%***
Total	***3,600***	***9,940***	***15,200***	***11,150***	***5,050***	***5,100***	**46,440**	***41%***
% of total Capex in the financial year indicated		40%	48%	45%	29%	37%		

5.2.1 Bonnie Doon Water Treatment Plant

Goulburn Valley Water proposes to construct the Bonnie Doon Water Treatment Plant to provide a treated water supply to reliably meet DHS water quality requirements and reduce water contaminant risks to the township of Bonnie Doon. Bonnie Doon has approximately 250 connections. The existing supply is only partially treated, whilst the raw water is from a degraded catchment which includes septic tanks and agricultural land use.

Completing the projects set out in Goulburn Valley Water's small town water supply improvement program is described as a key challenge in Goulburn Valley Water's Water Plan (Section 1.3). Page 106 of GVW's Water Plan describes the supply to Bonnie Doon as being at risk of not complying with turbidity standards and proposed halo-acetic acid and trihalomethane standards. Further to the descriptions in its Water Plan, GVW supplied a copy of its Bonnie Doon Water Supply – Quality and Strategy Master Plan (SKM, 16 November 2006) and its most up to date schedule of rates for the project.

The information supplied by Goulburn Valley Water demonstrates that, based on plant operational data, the existing water treatment plant fails some water quality parameters and is correlated with a high level of customer complaints. The information supplied by GVW describes three (3) options that were assessed to improve the supply to Bonnie Doon. These options included provision of either (1) a full water treatment plant, or (2) a treated water pipeline from Mansfield and providing a treated water stand pipe supply to customers. The provision of a full water treatment plant was adopted as the preferred option and then two separate treatment processes were considered.

The Bonnie Doon Water Treatment Plant (1.5 ML/D) is estimated by Goulburn Valley Water to cost $2.74 million. The report prepared by SKM (16 November 2006) estimated the cost of the project at $1.93 million for a 1 ML/D plant and $2.21 million for a 2 ML/D plant. The cost

estimates are based on a schedule of rates including a 30 percent contingency. The primary difference between the current and 2006 cost estimates is because GVW has now included a new water supply tank of a nominal capacity of 500 kL ($350K). The existing water supply tank has a capacity of 250 kL. The purpose of installing the new tank is to provide adequate reserve storage and is part of Goulburn Valley Water's clear water storage upgrade program. Minor differences are associated with the inclusion of an alum dosing facility and site fencing.

Construction of the treatment plant is scheduled to commence in the first year of the regulatory period and be completed in 2009/10. It is currently being designed.

The review team considers that there is a strong justification for the project which is based on water quality data collected from the field and the quality of water supply clearly fails to comply with ADWG water quality guidelines. The justification for the project is also supported by customer complaint records. The review team also considers that:

- the facilities proposed are reasonable and appropriate
- an appropriate and lowest economic cost option has been selected to address this water quality issue. The next best technically viable option was costed using favourable construction rates and was still significantly more expensive on a capital cost and net present cost basis than the proposed option.
- the cost of the treatment plant is reasonable based on the schedule of rates provided.
- the program has made a suitable and reasonable allowance for planning, design and construction.

Consequently, the review team recommends no adjustment to the quantum or timing of expenditure for this project.

5.2.2 Broadford Pipeline

Broadford and Kilmore are currently supplied by Goulburn Valley Water from Sunday Creek. GVW has undertaken analysis as part of its Water Supply Demand Strategy and has determined that the demand from Broadford and Kilmore currently exceeds system yield. GVW proposes to construct Stage 1 of this project involving a 450 mm diameter pipeline and 12 ML/d pump station from the Goulburn River to Broadford WTP to address this imbalance. Further works (beyond the second regulatory period and subject to development) are to be constructed as part of this scheme to further augment the supply from Broadford to Kilmore (Stage 2).

The Broadford Pipeline is discussed in Goulburn Valley Water's Water Plan and refers to GVW's Water's Water Supply Demand Strategy (GVW2055) which is a publicly available document. Section 6.13, page 114 of GVW2055 describes the options that were assessed for augmenting

supply to Broadford. These included demand management, raising the existing dam wall at Sunday Creek and constructing the Broadford Pipeline. Staging sub-options were also considered.

Goulburn Valley Water also supplied a copy of a report entitled, "Goulburn River to Broadford Pipeline, Submission for Approval of the Project by the Treasurer of Victoria" which outlined further options work including an assessment of the staging of construction.

The Broadford Pipeline project was originally estimated to cost $12.73M ($12.64M in the Water Plan). This can be separated into the cost of the pipe (approx $10.6 million) and the cost of the pump station ($2.13M). The proposal at the time of the Water Plan submission was to construct a pipe 23 kilometres long and 450 mm diameter. The cost of the pipe therefore equates to a rate of $1.02 per metre per mm. The pump station is a 12 ML/d facility. The cost of the pump station equates to $0.18K per ML/d. Water intake works are required as part of the cost of the pump station. These broad unit costs are consistent with other like projects and are at the lower end of the scale and are considered reasonable.

Goulburn Valley Water also supplied more detailed information from its 2007/08 Capital Works Program on the basis of the cost estimate (a mix of unit rates and schedule of quantities). At the Water Plan stage the cost of the project was not yet based on functional design or detailed design. The cost is based on a detailed planning assessment and some limited geotechnical assessment.

The review team considers that the need for the project is sufficiently justified on the basis of the information supplied and in GVW2055. The original cost estimate of the project (Water Plan) is reasonable in comparison to similar projects. Other pipelines reviewed by SKM have a cost typically in the range $1.00 to $1.50 per metre per mm diameter. The estimate for the Broadford Pipeline is at the low end of this range and is potentially low given current market conditions and the timing of this project. However, the cost of pump stations can vary significantly based on local conditions and the functional requirements. The review team's experience in relation to the construction of similar sized pumping stations suggests the estimate of Broadford Pumping Station is reasonable and potentially is also at the lower end of the expected cost band.

Four material developments in relation to this project have occurred since the submission of GVW's Water Plan:

- Firstly, GVW has decided to construct a section of DN600 pipe under the Hume Freeway and through an area designated for residential development rather than build separate stages of DN450 pipe. The pipe will still be sized as DN450 through open paddock areas. This will avoid a second freeway crossing under bore and future disruption in and construction of a second pipe in the urbanised areas. This is expected to be a more efficient and lower present cost process and will avoid public disruption and related costs. In particular the cost of a second pipe (Stage 2) will be avoided. This change has led to an increase in the estimated

project cost of approximately $2.5M from the estimate in GVW's Water Plan from $12.64M to $15.2M. The total project cost estimate (for Stages 1 and 2) for the pipeline and pump station is now $27.6M compared with $28.6M originally.

- The time frame for construction of the Broadford Pipeline has been accelerated and is generally on target. The desire for fast tracking is driven by the need to reduce reliance on water carting in future. DTF approval for the project was recently obtained by Goulburn Valley Water (January 2008) on the basis of the business case with $15.2M for Stage 1. Other approvals and easements are still to be obtained. The detailed design is to be completed by mid February 2008. The cost estimate for the project is to be updated then. GVW has flagged an intention to bring forward $3.5M of capital expenditure for the project into 2007/08.
- GVW has already let a contract for the procurement of the pipes from Tyco and fittings from Iplex (February/March 2008). Based on the contract value and allowing a 10% contingency, the contract let is some $0.7M less than the provision in both the original and current cost estimate for the project. The review team has sighted relevant documentation.
- Notwithstanding the desire to fast track the project, there is a real risk that the project may be delayed and that it will be delivered more consistent with the original timetable. The project is well advanced but is waiting approval from AAV (Aboriginal Affairs of Victoria). This may take some time and will impact both the overall extent to which the project can be fast tracked and the likely expenditure which could be brought forward into 2007/08 for the purchase of pipes and fittings.

GVW has proposed that the following amendments be made to the Water Plan capital expenditure for this project:

- The total capital expenditure be revised from $12.64M to $15.2M
- The expenditure profile be adjusted to effectively bring forward the project by approximately 18 months to two years with $3.5M in 2007/08 and the balance of $11.7M in 2008/09 (compared with $0.30M, $6.23M, and $6.10M originally proposed in years 2008/09, 2009/10 and 2010/11 respectively).

For regulatory pricing purposes, given the current uncertainty about AAV approvals and the construction start-up date, the review team recommends that:

- The total capital expenditure for the project be revised from $12.64M (Water Plan) to $14.5M. This includes the potential saving of approximately $0.7M already evident; and,
- The expenditure profile be adjusted to effectively bring forward the project by approximately 12 months to 18 months with nil provision in 2007/08, $12.0M in 2008/09 and the balance of $2.5M in 2009/10 (compared with $0.30M, $6.23M, and $6.10M originally proposed in years 2008/09, 2009/10 and 2010/11 respectively).

5.2.3 Above Ground Asset Replacement

Goulburn Valley Water has an above ground asset management program as part of its overall asset replacement program. It proposes a 20 year program to replace above ground assets which have a criticality rating of 4 or 5 (based on a risk assessment and ranking process). The estimated replacement cost of these assets is $46.9 million. GVW has halved the cost of the program on the basis that many of the above ground assets can be refurbished at a reduced cost.

At the Draft Report stage the review team considered that the development of the program based on selected assets with a criticality ranking of 4 or 5 appeared reasonable, but the halving of the cost of the program appeared arbitrary. At the second meeting with GVW and subsequently further information was received that provided confidence that the proposed expenditure was reasonable.

In particular, the following was informative:

- The current replacement cost valuation of all sewer and water assets was indicated to be approximately $645M. If say these all had a 100 year life and at least approximately 15% of all assets are above ground then a rough estimate of reasonable expenditure would be say approximately $1M p.a. (or $5M over the 5 year regulatory period).
- GVW provided some examples of replacement works that have been recently undertaken recently where, in the majority of cases, the actual replacement cost was higher than the current replacement cost estimate (in Hansen asset management system data base). These actual increased costs were typically in the range 10 to 200% higher. GVW expects this trend to continue.
- GVW's 2007/08 expenditure is being managed to the about the proposed expenditure level (and could be higher but for this active intervention).
- GVW has acknowledged the uncertainty in its asset database information (and its intention to improve the quality of information on its assets during the first two years of the second regulatory period). During the first two years of the regulatory period the proposed expenditure level is lower and somewhat higher in the later years as assets for replacement are more specifically identified and targeted based on improved quantitative information on asset condition.
- The current 5 year program is based on assets (approximately 900 No.) that are known to require attention based on a desktop assessment in advance of a quantitative assessment of their asset condition being undertaken. The estimated cost of undertaking works on these assets was estimated in 2006/07 to be approximately $900K p.a. over 5 years.

In summary the review team considers that:

- GCW's proposed expenditure on above ground asset replacement is prudent and reasonable both in terms of quantum and profiling over the 5 year regulatory period; and

- the expenditure will most probably need to be increased once further and better quantitative information becomes available on the condition of such assets (i.e. potentially ramped up after GVW has had an opportunity to more fully develop its asset management strategy).

5.2.4 Alexandra to Eildon Pipeline

Goulburn Valley Water is responsible for supplying water to the townships of Alexandra, Eildon and Thornton. Each township has had its own water supply system. GVW advises that the Alexandra water supply system has a treatment plant which provides full treatment. However, this system is undersized and treated water is shandied with raw water during summer months. Eildon and Thornton have no water treatment per se but only disinfection systems. To ensure that the water supplied to the region meets drinking water guidelines GVW proposes to upgrade the Alexandra Water Treatment Plant and build the Alexandra to Eildon pipeline.

Goulburn Valley Water has provided a copy of a report entitled "Treated Water Supply To Alexandra, Thornton and Eildon: Submission for Approval of the Project by the Treasurer of Victoria and the Minister for Water" which summarises the business case analysis undertaken to date.

The Treasury submission summarised an analysis of three options. These options included separate treatment plants for all three systems, a shared treatment plant for all three systems and a shared treatment plant for Eildon and Alexandra (with a separate treatment plant for Thornton) and a pipeline connecting Alexandra to Eildon. The present cost of a shared treatment plant and interconnecting pipeline for all three systems was found to be the lowest cost option on a net present cost basis. As indicated by Goulburn Valley Water in its Treasury Submission the cost difference between the three systems is relatively small given the accuracy of the estimates ($7.6M to $8.4M) at this business case stage of the project. Sub options for the preferred option were then considered, which included investigating alternative ways to supply Thornton based on the availability of existing pipe assets.

The detailed design for the Alexandra - Eildon pipeline is almost complete and there are some approvals still to be obtained. The current design program has 3 months of float between the completion of the design and tendering of the contract for construction. The time frames for completion of the project appear reasonable.

Goulburn Valley Water estimates that the cost of the Alexandra Eildon pipeline is $6.47 million including a 25 percent contingency. This estimate is based on a mixed schedule of rates and unit cost analysis. The pipeline is 25.5 kilometres long and varies between 200 mm and 250 mm diameter. The unit cost of the pipeline (depending on the amount of 200 mm and 250 mm pipe) is therefore between $0.93 and $1.16 million per metre length per millimetre diameter.

The information provided sufficiently supports project justification (to address the water quality issues in the towns). GVW has selected the project with the lowest or equal lowest present cost and this appears reasonable by comparison to the unit cost of similar sized pipeline projects.

The review team recommends no adjustment to the quantum or timing of expenditure for this project.

5.2.5 Unlined Cast Iron Water Replacement Program

Goulburn Valley Water has 15 to 20 kilometres of unlined cast iron and galvanised iron water reticulation mains within its system. The objective of this project is to undertake a planned pro-active program to replace unlined cast iron and galvanised iron water mains to manage risks associated with meeting Australian Drinking Water Guidelines, meet Statement of Obligation requirements and rectify poor pressures.

Goulburn Valley Water provided a report titled "Cast Iron & GWI Water Main Replacement Program (Ref No 1806)" which described this program. The report indicates that GVW has had the second highest water quality complaint record of the Victorian urban water authorities. GVW has linked some of these complaints with unlined metallic pipes. It has provided information on two cast iron mains that are currently being replaced, one due to dirty water complaints and the other due to insufficient supply; and also information on how unlined cast iron mains exposed in Stanhope and Kyabram exhibited severe turberculation.

Section 4.1.1.4 of the Water Plan describes the experience of a Customer Reference Group member who noted improvement in pressure after replacement of a cast iron main in their street. Photographic evidence of exposed cast iron mains which were almost fully closed were contained in the reports provided by Goulburn Valley Water. GVW advises that there is a substantial body of other anecdotal evidence consistent with the objectives of the program.

The cost estimate of the program (as per the Water Plan) is based on replacing 15 kilometres of main (over the 5 year regulatory period) for a budget of $6 million including a 25 percent contingency. This total cost is based on recently completed replacements and equates to a unit cost of between $2.6 per metre length per millimetre diameter and $4.0 per metre length per millimetre diameter. These unit costs seem unreasonably high even in the current market conditions.

In the Draft Report the review team considered that the project aims of reducing Goulburn Valley Water's high level of water quality complaints are justified based on the supporting information provided but sought further information on:

- more certainty about the relationship between the high level of water quality complaints that GVW is experiencing and unlined metallic pipes as the cause – and that this expenditure will deliver the intended benefits;

- the basis of and justification for the quantum of expenditure proposed; and
- the reasons and urgency for ramping up of the program given that such expenditure has historically been quite low.

GVW has provided information that, at its February 2008 meeting, the GVW Board approved a three contract for the provision of unlined cast iron water replacement works. Assessment of the contract was based on undertaking replacement works (and other similar and related works) for 6000 metres of water main per year at a total indicative cost of $1.5M per year (as a base). The information sighted contains an assessment of market rates for this work. GVW is currently progressing on schedule with this project.

On this basis the estimated provision which should be made for replacement of 15 km of unlined cast iron water mains is approximately $750K p.a, or say $800K p.a. allowing some contingency, for each year of the regulatory period. This is consistent with the unit rates implied in the contract awarded which are significantly lower than those which formed the basis of GVW's Water Plan estimate.

In summary the review team considers the work justified and recommends that:

- the quantum of expenditure be reduced to $4M over the regulatory period and spread evenly at $0.8M in each year.
- data be collected to more rigorously identify the benefits of the program. This should be built into the early stages of the program.

5.2.6 Asset Acquisition – Corporate Assets

SKM requested further information from Goulburn Valley Water regarding this expenditure at the initial meeting and discussion. It is evident that this expenditure is also referred to as Externally Financed Works, which are works constructed by and financed by developers and builders and gifted to GVW. Goulburn Valley Water forecasts expenditure in this area based on development rates. Without getting into details and merits of different approaches SKM's general view is that GVW's approach to forecasting such expenditure is reasonable (and reasonably consistent with expenditure in previous years). No adjustment is recommended for this project.

5.2.7 Shepparton Operations Centre Building Extension

The project was not identified in Goulburn Valley Water's Water Plan submitted to the ESC. It involves extension of an existing GVW building to expand its operations centre capability.

Goulburn Valley Water plans to construct an extension of the existing building located within the water storage compound located at the corner of Florence Street and Old Dookie Road Shepparton. The existing building accommodates the Property Service, Customer Service, Asset Performance, Trade Waste and Central District Operations and Maintenance groups. The extension which is

scheduled to be completed by December 2008 is to accommodate the additional 10 office based staff proposed in the Water Plan.

The budgeted cost of $600K involves redevelopment of existing floor space and new construction totalling 240 square metres. GVW has provided information more particularly describing what is proposed and the basis of this cost estimate. [NB: Any additional costs associated with this extension for maintenance, cleaning and power costs are to be absorbed in the Opex identified in the Water Plan.]

The review team considers that undertaking this work is prudent and reasonable, the cost estimate is reasonable and recommends that for regulatory pricing purposes:

- $600K be included in the Water Plan for this work but that this provision should be in 2009/10.

5.2.8 Filter Rehabilitation

Since preparation of GVW's Water Plan it has completed inspections of the filters at its Shepparton, Kyabram and Broadford Water Treatment Plants.

GVW has provided the review team with copies of the filter inspection reports prepared by an independent consultant for the first two water treatment plants indicated above and photographic evidence of the condition of the Broadford WTP filter beds. On the basis of this information, it is evident that a range of urgent repairs need to be undertaken at each of these plants. The range of issues to be addressed includes actual or imminent structural failure of various components of the filter bed, including the cells themselves, plenums and the underdrainage system generally.

The review team considers that there is strong justification for undertaking this work urgently.

GVW has also provided the review team with budget estimates from Water Treatment Australia for the rehabilitation works. The total expenditure proposed is $630K in 2008/09 based on the respective cost estimates of:

- Shepparton: $100K
- Kyabram: $370K
- Broadford: $160K

The review team considers that both the quantum and timing of the proposed expenditure is prudent and reasonable and recommends that it be adopted.

5.3 Recommendations

Error! Reference source not found. provides a summary of the review team's recommended adjustments to Goulburn Valley Water's Water Plan capital expenditure forecasts for the 5 year regulatory period.

Table 5-3: Recommended Changes to GVW's Water Plan CAPEX

Change Item	Project/Description	Forecast	$M						
			2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	Later Period
1	Above Ground Asset Replacement	Original Water Plan:		0.90	0.90	1.15	1.15	1.20	
		Recommended Revised:		0.90	0.90	1.00	1.00	1.00	
		Recommended Net Change:				-0.15	-0.15	-0.20	
2	Unlined Cast Iron Water Replacement	Original Water Plan:		1.20	1.20	1.20	1.20	1.20	
		Recommended Revised:		0.80	0.80	0.80	0.80	0.80	
		Recommended Net Change:		-0.40	-0.40	-0.40	-0.40	-0.40	
3	Broadford Pipeline	Original Water Plan:	0.01	0.30	6.23	6.10			
		Recommended Revised:		12.00	2.50				
		Recommended Net Change:	-0.01	11.70	-3.73	-6.10			
4	Shepparton Operations Centre Building Extension	Original Water Plan:			0.00				
		Recommended Revised:			0.60				
		Recommended Net Change:			0.60				
5	Water Treatment Plant - Filter Rehabilitation [Shepparton, Kyabram, Broadford]	Original Water Plan:		0.00	0.00	0.00	0.00	0.00	
		Recommended Revised:		0.60					
		Recommended Net Change:		0.60					
Total Recommended Net Change:			$ (0.01)	$ 11.90	$ (3.53)	$ (6.65)	$ (0.55)	$ (0.60)	
Original Water Plan Total Regulatory Capex:				$ 24.84	$ 31.87	$ 34.90	$ 17.62	$ 13.66	
Recommended Revised Total Regulatory Capex:			**$ (0.01)**	**$ 36.74**	**$ 28.34**	**$ 28.25**	**$ 17.07**	**$ 13.06**	

6. Operating Expenditure (Opex)

Table 6-1 presents a breakdown of historical and forecast operating expenditure in a format used by Goulburn Valley Water in its management reports.

- **Table 6-1: Historical and Forecast Opex (Real 1/1/07 $M)**

Category	06-07	07-08	08-09	09-10	10-11	11-12	12-13
Labour Outdoor	3.83	3.69	3.96	4.00	4.00	4.04	4.07
Labour Oncosts	1..05	1.04	1.16	1.16	1.16	1.16	1.16
Materials							
Power	2.06	2.26	2.33	2.38	2.38	2.43	2.48
Chemicals	1.69	2.43	2.44	2.46	2.55	2.57	2.59
Desludging	0.37	0.51	0.55	0.55	0.55	0.55	0.55
Raw Water	0.77	0.81	0.86	0.91	0.96	1.02	1.08
Materials	0.96	0.69	0.82	1.07	1.32	1.44	1.57
Maintenance	1.00	1.01	1.01	1.01	1.01	1.01	1.01
Licences – EPA	0.10	0.12	0.12	0.12	0.12	0.12	0.12
Other	4.9	3.58	3.70	3.70	3.71	3.70	3.70
Corporate							
Labour	5.07	5.09	5.50	5.50	5.61	5.67	5.67
On-costs	1.79	1.94	2.08	2.08	2.12	2.14	2.14
Consultancies	1.14	1.10	1.44	1.49	1.48	1.39	1.42
Enviro Contribution	1.50	1.46	1.94	1.94	1.94	1.94	1.94
Consultn - Conservation	0.50	0.27	0.27	0.27	0.27	0.27	0.27
Licence – ESC	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Licence – DHS	0.02	0.05	0.05	0.05	0.05	0.05	0.05
Other Corporate	2.12	2.78	2.88	2.94	2.90	2.91	2.93
Total	**28.86**	**28.87**	**31.17**	**31.70**	**32.18**	**32.45**	**32.81**

The data in the above table was supplied to the review team after the initial meeting and discussion. The Opex for 2006/07 in the above table was originally slightly different to the Opex in **Table 6-2** but this has now been corrected.

By the end of the second regulatory period raw water, desludging, chemicals and other corporate expenditure are all significant line items that are forecast to increase by between 38 percent and 64 percent relative to the 2006 – 07 base year.

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 Goulburn Valley 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	25.62	26.39	26.38	28.14	28.62	29.05	29.27	29.56
New obligations				-	-	-	-	-
Sub-total Opex	***25.62***	***26.39***	***26.38***	***28.14***	***28.62***	***29.05***	***29.27***	***29.56***
Bulk water charges	0.80	0.78	0.82	0.86	0.91	0.96	1.02	1.08
Licence fees	0.29	0.20	0.23	0.23	0.23	0.23	0.23	0.23
Enviro levy	1.55	1.50	1.46	1.94	1.94	1.94	1.94	1.94
Gross operating expenditure	**28.24**	**28.86**	**28.87**	**31.17**	**31.70**	**32.18**	**32.45**	**32.81**
Target BAU Opex			**26.51**	**26.64**	**26.77**	**26.90**	**27.03**	**27.16**
Variance from Target BAU Opex			**(0.14)**	**1.50**	**1.85**	**2.15**	**2.23**	**2.40**
Customers and Consumption								
Total customers ('000)	53.17	52.54	53.33	54.13	54.94	55.76	56.60	57.45
Growth relative to 2006-07	-	1.00	1.02	1.03	1.05	1.06	1.08	1.09

Overall total planned operating expenditure (excluding bulk water charges, licence fees and environmental levy) in the second regulatory period 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% productivity improvement. Thus prima facie GVW will not achieve the 1% productivity target unless some or all of the new/additional costs planned can be justified as part of the future BAU base. An initial 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 Goulburn Valley 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 Goulburn Valley Water (Real 1/1/07 $K)**

Line Item	Description	Forecast Expenditure ($ 000 - real Jan 2007)					
		2008/09	2009/10	2010/11	2011/12	2012/13	Total
1	Electricity Costs - real cost increases (included by the review team)	-	-	-	-	-	-
2	New Opex from Capex	171	306	431	556	763	2,227
3	New resources to efficiently administer SDWA and regulations	450	450	450	450	450	2,250
4	Resources for Asset Management Plan	265	265	265	265	265	1,325
5	Community Engagement integrated into specific projects	180	180	180	180	180	900
6	Water Conservation Strategy	170	130	130	130	115	675
7	WSDS (Water Supply Demand Strategy)	15	5	310	265	-	595
8	Customer Meter Testing Program	100	100	100	100	100	500
9	Desludge, FAL Rating, WSAA/NWI Audit & Asset Revaluation	65	135	65	65	95	425
10	Roads Act - Council Passing on New Costs for Road Reinstatement	75	75	75	75	75	375
11	Resources to Introduce & Manage Compliance Systems	70	70	70	70	70	350
12	Greenhouse Strategy	67	102	47	67	47	330
13	Customer Meter Change Over - Electrocution Risks	55	55	55	55	55	275
14	Sustainability	-	-	90	90	90	270
15	Odour Modelling Studies	35	35	35	35	110	250
16	Sewerage System Management Plan	45	30	45	30	30	180
17	Cleaner Production Program	35	35	35	35	35	175
18	Terrorism Plan Preparation and Audit	40	20	20	20	60	160
19	AS/NZ 4801 Management System Implementation	30	30	30	30	30	150
20	Northern Region SWS	50	-	-	-	15	65
21	Mixing Zone Obligations	40	5	5	5	5	60
22	Various Miscellaneous Items (16 items)	240	133	233	163	263	1,032
23	**Total**	**2,198**	**2,161**	**2,671**	**2,686**	**2,853**	**12,569**
24	Variance from Target BAU Opex	1,500	1,846	2,152	2,234	2,402	10,134
25	**Difference (requiring explanation)**	**698**	**315**	**519**	**452**	**451**	**2,435**

NB: A large number of smaller cost items put forward by GVW have been consolidated into a single line in **Table 6-3** (at line Item 22). The aggregate amount in each year remains unchanged.

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

The review team notes that Goulburn Valley Water does not appear to have included any provision for real cost increases in electricity over the regulatory period and did not put forward this item as an explanation for Variance from Target BAU Opex.

Table 6-4 summarises the real electricity cost increases relative to 2006/07 for GVW's business.

Table 6-4: GVW - Assessment of Real Electricity Cost Increases

Line Item	Item Description	Expenditure/Movement from 2006/07 ($ 000 - real Jan 2007)						
		2006/07	2008/09	2009/10	2010/11	2011/12	2012/13	Total
1	Electricity costs as (per GVW Water Plan ($000)	2060	2330	2380	2380	2430	2480	12000
	Growth factor (from water customer numbers)							
2	Electricity demand (MWh)	18830	20900	21330	21780	22020	22250	108280
3	Changes in demand relative to 2006/07 (MWh)		2070	2500	2950	3190	3420	14130
4	Average electricity price ($/kW/Hr)	0.1094	0.1115	0.1116	0.1093	0.1104	0.1115	
5	Recommended real proportional increase in electricity price relative to 2006/07 (Section 3.1.1)		0.12	0.15	0.15	0.15	0.15	
6	Increased costs attributable to increase tariffs ($'000)		247	309	309	309	309	1483
7	Increase costs attributable to increased demand		254	315	371	401	430	1771
8	Total electricity costs recommended ($K)		2561	2684	2740	2770	2799	13554
9	**Total increase in real electricity costs recommended = Accepted Explanation of Variance from Target BAU Opex ($K)**		**501**	**624**	**680**	**710**	**739**	**3254**
10	Electricity increases expected compared with 2006/07 (as per GVW Water Plan) ($K)		270	320	320	370	420	1700
11	**Difference (Line 9 - Line 10) = Potential adjustment ($K) [+ve = additional provision]**		**231**	**304**	**360**	**340**	**319**	**1554**

The real electricity cost increases for GVW comprise:

- ***Real cost increases on base demand*** (as at 2006/07) allowing for price effects, i.e. real cost increases expected over the period due to real price increases relative to the underlying prices applying in the base year. The review team has proposed real price increases relative to 2006/07 of 12% in 2008/09 and 15% in later years (i.e. not cumulative) as indicated in **Section 3.2.1**. The outcomes for this component are (refer **Table 6-4** above)
  - Base demand: Line Item 2 (2006/07)
  - Increased costs due to price movements: Line Item 6
- ***Real cost increases on increases in demands*** (associated with new infrastructure), allowing for both demands and real price movements. The outcomes fro this component are (refer **Table 6-4** above)
  - Changes in demand relative to 2006/07: Line item 6
  - Increased costs due to new demands and price movements: Line Item 7
- ***Total recommended electricity costs*** as indicted at Line Item 8. This equals the sum of the 2006/07 cost base (Line Item 1) plus real cost increases on base demand and real cost increases on increases in demands as above.

The amount accepted as contributing to justification of the Variance from Target BAU Opex is the difference between the review team's Total Recommended Electricity Costs (Line Item 8, **Table 6-4**) in the relevant year and the electricity cost base in 2006/07 of $2060K. The amount accepted is indicated at Line Item 9, **Table 6-4**.

The amount of any potential adjustment to GVW's Water Plan Opex (increase or decrease) due to real electricity costs is indicated in Line Item 11, **Table 6-4.** This is the difference, for each relevant year, between Line Item 8 (the review team's recommended electricity costs) and Line Item 1 (GVW's proposed electricity costs as per its Water Plan).

In GVW's case there is a positive adjustment to be made (increasing Water Plan opex) in each year of the regulatory period. These amounts are transferred to the adjustments Table in **Section 6.3**.

6.2.2 Labour

This section deals with real increases in labour costs.

Various businesses have put forward as justifying real cost increases:

- Increases in real labour costs in excess of CPI ("EBA" increases)
- Increases in costs associated with additional resources
- Band increments

The first two of these are considered to be reasonable for regulatory pricing purposes as contributing to Variance from Target BAU Opex.

As outlined in **Section 3.2.3,** 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 are passed through as justifying explanations of the Variance from Target BAU Opex.

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 BAU. 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.

Real Labour Cost Increases:

The positions proposed by GVW and key details are summarised in **Table 6-5** following.

The review team has assessed GVW's real cost increases for increases in EFT personnel and "EBA" increases and the outcomes are summarised in **Table 6-6**.

Table 6-5: GVW – Details of Proposed Increased Personnel Numbers

Position No.	PROPOSED POSITIONS and FUNCTIONS	Base Salary (+18% on-costs)	Other Expenses - vehicle, FBT, phone etc	Total
	Sustainability			
1	Sustainability Coordinator	89.25	13.5	102.75
2	Sustainability Officer	77.35	0	77.35
	Asset Management			0
3	AGARP Engineer	77.35	0	77.35
4	Data Management Coordinator	89.25	10.5	99.75
	Water Quality Specialist Group			0
5	New WQ Scientist	83.3	4	87.3
6	Tech Admin Assistant	59.5	0	59.5
	Operations			0
7	Water Treatment Technician	65.45	11	76.45
8	Water Treatment Technician	65.45	11	76.45
9	Water Treatment Technician	65.45	11	76.45
10	Wastewater Treatment Technician	65.45	0	65.45
	Planning & Project Development			0
11	WTP & WMF process planner	77.35	0	77.35
12	**IMS Coordinator**	89.25	13.5	102.75
13	**Customer Services Coordinator**	89.25	10.5	99.75
14	**Community Engagement**	71.4	3	74.4
	Total ($K)	1065.05	88.0	1153.05
	Average per position ($K)	76.075	6.286	82.361

Table 6-6: Review Team's Assessment of GVW's Real Labour Cost Increases

Line Item	Item Description	Expenditure ($ 000 - real Jan 2007)						
		2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
	GVW VIEW - based on information provided							
1	Total labour cost ($M)	11.744	11.761	12.693	12.732	12.887	13.003	13.042
2	Base Labour Costs ($M, as advised by GVW)	11.744	11.761	11.773	11.812	11.807	11.843	11.882
3	Other labour costs - increments and new labour ($M)	-	0.0164	0.9484	0.9872	1.1426	1.2591	1.2979
4	Total number of labour and staff	180.6	184.6	195.6	195.6	197.6	198.6	198.6
5	Base year staff	180.6	180.6	180.6	180.6	180.6	180.6	180.6
6	New staff - (as per GVW Water Plan)		4.0	15.0	15.0	17.0	18.0	18.0
	New staff - (as per GVW March 2008 advice)		4.0	10.0	12.0	14.0	14.0	14.0
7	Average cost of labour and staff ($K/year)	65.03	63.71	64.89	65.09	65.22	65.48	65.67
8	Average cost of new labour and staff ($K/year)		90.00	90.00	90.00	90.00	90.00	90.00
	Review Team Assessment							
9	Base Labour Costs allowed ($M)	11.744	11.744	11.744	11.744	11.744	11.744	11.744
10	Real increases in allowed base labour costs ($K)		147	295	446	598	753	909
11	Implied number of new FTE provision (*full year basis*)		2.0	6.0	9.0	9.0	9.0	9.0
12	Provision for new labour costs (including 20% on-cost) -all categories ($K)		160	486	738	747	757	766
13	Total Labour Opex allowed (= sum of Lines 9,10 & 12), ($M)		12.051	12.526	12.928	13.090	13.254	13.419
14	Total increase in real labour costs recommended from 06/07 = Accepted Explanation of Variance from Target BAU Opex ($M)			0.781	1.184	1.346	1.509	1.675
15	**Difference (Line 13 - Line 1) = Potential adjustment if Variance from BAU Opex Target not met ($M)**			(0.167)	0.197	0.203	0.250	0.377

EFT Increase in Personnel Resources: The review team has noted the views of GVW in terms of personnel resources and the supporting needs based on the information provided and related discussions. **Table 6-5** indicates that it is seeking 14 additional personnel early in the period.

In summary, the review team has considered the information provided by GVW and has concluded that for regulatory pricing purposes that reasonable and prudent expenditure in effectively resetting the BAU Opex base for GVW would involve as indicated in **Table 6-6**:

- Providing for expenditure associated with a maximum of nine personnel (full year basis) to be effectively built into GVW's new BAU Opex base;
- The incorporation of this expenditure to be phased in from the current year to 2009/10.

In forming its view the review team took into account the following and:

- Notes and agrees that GVW has a primary need to increase resourcing to address management of the increased number of water treatment plants and improve its asset management performance;
- Considers that some rationalisation of the positions proposed would be prudent. For example, across the water / wastewater technicians and/or process planner/ water quality specialist / wastewater technician and/or asset data management / IMS and/or sustainability / community engagement / customer services activities.
- Considers that the need for some positions may be "temporary" to overcome an immediate need or "peak" demand (e.g. asset management, various water quality issues).
- Considers that it will take some time to appoint people to positions and to achieve a full complement (whatever that is).
- Understands that some personnel which were included in the reset Opex base at the first Water Plan were only filled late in the period (or not at all).
- Considers that inclusion of the full complement and expenditure sought by GVW in the reset regulatory Opex base at this Water Plan would be excessive relative to other businesses and not be prudent.
- Notes that the business will in any case properly form its own view as to what is appropriate to address business needs during the regulatory period.

To establish the reasonable costs for new employees, an average cost of $80K per new employee (including on-costs) has been adopted consistently across all water businesses except where there are justifiably different circumstances applying. The ancillary costs are assumed to be absorbed into the growth adjusted Target BAU Opex.

Real Labour Cost Increases (existing personnel): The review team understands that GVW has not provided for any real labour cost increases in its labour costs underpinning the Water Plan for existing (or additional) employees.

In summary, the outcomes of the review team's assessment, as reflected in **Table 6-6**, are:

- Real allowable increase in base labour costs (existing personnel) - Line Item 10
- Real increases in labour costs for new personnel (and 1.25% p.a. real increase) – Line Item 12
- Review Team's view of Total Labour Costs (real, January 2007) – Line Item 13.

The amount accepted as contributing to justification of the Variance from Target BAU Opex is the difference between the review team's Total Recommended Labour Costs (Line Item 13, **Table 6-6**) in the relevant year and the labour cost base in 2006/07 of $11.744M. The amount accepted is indicated at Line Item 14, **Table 6-6**.

The amount of any potential adjustment to GVW's Water Plan Opex (increase or decrease) due to real labour cost increases is indicated in Line Item 15, **Table 6-6.** This is the difference, for each relevant year, between Line Item 13 (the review team's recommended labour costs) and Line Item 1 (GVW's proposed labour costs as per its Water Plan).

In GVW's case there is a positive adjustment to be made (increasing Water Plan opex) in each year of the regulatory period other than 2008/09. These amounts are transferred to the adjustments Table in **Section 6.3**.

6.2.3 New Opex from New Capex

Goulburn Valley Water estimates that new assets constructed over the second regulatory period will lead to an increase in Opex of $2.22M over the regulatory period. GVW has provided a detailed list of over 90 projects that will lead to additional Opex and the associated breakdown of expenditure in each year of the regulatory period for them.

New Opex from Capex is forecast to lead to an increase in planned expenditure from $171K in the first year of the regulatory period to $763K in the final year of the regulatory period. The review team considered 6 projects from the first year of the regulatory period and 10 projects from the final year of the regulatory period. These projects represented the largest projects from each year and comprise the bulk of this new expenditure (over approximately 85% of such proposed new expenditure in those years).

The key projects incurring new opex will be:

- Alexandra to Eildon pipeline: forecast to require $40K p.a. in the first year of operation (2009/10) and then $80K p.a. in the last three years of the regulatory period.

- Tatura Winter Storage: forecast additional Opex of $67K p.a. commencing 2008/09, and
- Broadford Pipeline: forecast additional Opex of between $66K p.a. and $73K p.a. commencing in 2009/10
- Marysville WMF augnmentation: $60K p.a. commencing 2009/10.

Other notable projects are:

- Bonnie Doon: WTP Filtration
- Colbinabbin: WTP Filtration Project [recent PB Preliminary Design Report estimate of $45k pa is higher than the Water Plan allowance of $37k pa]
- Girgarre: WTP Filtration Project [recent PB Preliminary Design Report estimate of $45k pa is higher than the Water Plan allowance of $37k pa.. commencing 2009/10]
- Nagambie: Chinaman's Bridge Caravan Park – the operating cost estimate is based on 2% of the capital value of the project, which involves a duty/standby pumping station, rising main and biological odour control facility at the rising main discharge point.
- Sawmill Settlement: WTP [SMEC functional design report estimate of $65k pa is higher than the Water Plan allowance of $50k pa., commencing 2009/10]
- Seymour: WMF Solids Handling Upgrade [URS concept report estimate of $27k pa is higher than the Water Plan allowance of $18k pa.]
- Shepparton: Odour control at SHPS05 Wanganui Road (draft PB concept report) – this suggests the operating cost will be between $15k - $35k pa depending on the option finally selected. Commences 2009/10.
- Yea: Provision of Filtration (Earthtech functional design report)
- MarysvilleWMF augmentation ($60K) in 2009/10

Other projects commenced or expected to commence before 2008/09 include

- Nathalia WMF augmentation: $43K p.a.
- Cobram: $15K p.a.

To test the reasonableness of this "Opex from New Capex" expenditure the review team assessed information in two ways. It has sighted a number of typical reports supporting the new Opex from new infrastructure facilities and is generally satisfied with the basis on which GVW has determined these costs and that it has generally adopted a prudent approach to the cost estimates that have been included in this category for the Water Plan. GVW appears to have consistently appears to have adopted a prudent position in estimating its costs during the project planning and development phases.

The review team also considered a sample number of specific activities of a more general nature from the first and last years of the regulatory period. The activities that were considered from the first year of the regulatory period (resulting in increased expenditure from new capex) and some key points to be noted are:

- All Areas Cathodic Protection: In 2006/07 Goulburn Valley Water completed a cathodic protection program which included the installation of sacrificial anode or impressed current protection of steel towers, tanks and pipes. Equipment was installed at approximately 20 sites. These sites require 6 month or yearly inspection and or replacement of anodes.
- All Areas Water Quality Instruments: Goulburn Valley Water is part way through a 5 year program of installing on-line turbidity, pH and chlorine monitoring equipment at its Waste Management facilities. These probes require weekly calibration and more substantial calibration once per month. Other costs include replacement of gel caps, probes and other consumables. The maintenance of this equipment has been based on 10 percent of the capital cost of the program because of the high wearing nature of the equipment.
- Alexandra Works Centre, Cobram WMF, Kyabram WMF Facility and Nathalia WMF make up $98K of an expected $438K of increased Opex in year 1 of the regulatory period, but these have not been included in the $171K that GVW are using to explain its variance in expenditure from Target BAU Opex on the basis that these expenditures are growth related.

The activities that were considered from the last year of the regulatory period (resulting in increased expenditure from new capex) and some key points to be noted are:

- Dookie, Stanhope and Katamatite WTP Filtration: These WTP's will be installed during the regulatory period to ensure that GVW meets ADWG requirements. They are all package treatment plants that require operator attendance. Opex is also required to truck away waste from a chemical washing process.
- Mooroopna WMF Upgrade: Opex is planned to operate new aerators to be placed on existing lagoons at the WMF. The new works are required to address odour complaints that are being raised by neighbours to the WMF.
- All Areas Water Quality Instruments – The explanation of the Opex required for this project is as described for the first year of the regulatory period. The amount of Opex increases from $52K to $130K p.a. as the number of instruments installed increases. The installation program will finish at the end of the third year of the regulatory period.
- Alexandra to Eildon Pipeline and Broadford Pipeline: The Opex for these pipelines is based on a percentage (0.1%) of the capital cost of the pipelines. Both pipelines are to be commissioned during the regulatory period. Whilst these pipelines will not require immediate maintenance there will be other pipelines in GVW's system that will begin to require

maintenance. This simplified approach to determining new Opex from Capex is considered reasonable.

- Shared Assets – Water & Sewer, Nathalia WMF and Tatura WMF Augmentation make up an $197K of an expected $1,494K of increased Opex in year 5 of the second regulatory period, but these have not been included in the $763K that GVW are using to explain its variance in expenditure from Target BAU Opex on the basis that these expenditures are growth related.

The maintenance component of the increased cost estimates are based on a "rule of thumb" allowance as follows - for pipe maintenance (0.1 percent), civil maintenance (0.5 percent) and mechanical and electrical maintenance (2.0 percent) as a percentage of the capital cost of the project. These broad percentage allowances seem reasonable. The imputed asset lives are approximately 100 years, 200 years and 50 years respectively. Power, chemical and operating labour costs are then added to maintenance costs. GVW has used costs extracted from concept, preliminary or functional design reports for the relevant projects.

The maintenance costs are assumed to apply from day 1 after the asset is constructed. The reality is that new pipe and civil assets should need less maintenance in the early years of operation. Goulburn Valley Water's view is that if the cost of maintaining these new assets is not included then the cost of maintaining assets that were constructed 10, 15 or 20 years ago that are now requiring increased levels of maintenance should be included. While there are differences of view as to approach, assuming a maintenance cost averaged over the projected economic life of the asset seems reasonable for inclusion as new additional expenditure for new maintenance costs associated with new assets/capex.

The review team considers that in principle the costs of power, chemical and operating labour resulting from new Capex should be allowed as an explanation of variance from Target BAU Opex.

In summary, the review team:

- is generally comfortable with the basis on which these "Opex from New Capex and New Projects" costs have been determined;
- notes that there are many small items with small costs attached to them which could be potentially absorbed and is not convinced about the full quantum of costs for say water quality instruments maintenance;
- notes that some of the costs could potentially be considered as being covered by the growth adjustment component in setting Target BAU Opex.
- considers that offsetting this GVW has tended to underestimate the likely opex costs, at least for some projects.
- remains uncertain whether some of this expenditure is ongoing i.e. has some "one-off" component in it and/or some may be more properly part of the existing BAU Opex base.

On a pragmatic basis, the review team recommends that for the purposes of a contribution to justifying Variance from Target BAU Opex that the proposed costs in the first two years be adopted and the costs for the last three years be reduced by a small amount (approximately $30K, $50K and $60K in each of the last three years respectively.

6.2.4 New resources to efficiently administer SDWA and regulations

Section 4.5.3 of Goulburn Valley Water's Water Plan describes the requirements of the Drinking Water Act 2003 and its intention to create 5 new staff positions. Two additional office staff will assist and guide field operation and manage the significant administrative burden associated with the water quality sampling program, water treatment and distributions infrastructure optimisation and risk management plan administration. Three additional water treatment operators/technicians have been allocated to work in the field.

Goulburn Valley Water advises that the additional staff will be specifically focussed towards improving water quality. The additional water treatment technicians will undertake tasks such as maintaining and cleaning filters. The additional office staff will be involved in coordinating field activity and increasing the focus on water quality analysis and reporting. The new staff are not being employed to manage new or proposed treatment plants.

Water treatment plant operators are multi-skilled and undertake other non water quality related tasks as required. The current level of resourcing in this area is approximately 25 full time equivalent water treatment plant operators. The future level of resourcing required has been estimated by determining the number of site visits required per treatment plant and the number of maintenance hours required per visit. The additional 3 field staff is the equivalent to a 12 percent staffing increase in this area. Goulburn Valley Water has 4 water supply districts (Shepparton, Alexandra, Seymour and Cobram). The new positions will be located in different districts, with the fourth district being serviced through a minor reorganisation of existing staff.

SKM's view is that the expenditure is broadly justified on the basis that Goulburn Valley Water does have the second highest water quality complaint record in the state and that the expenditure should be included as new BAU Opex.

This has been considered under **Section 6.2.2** and the costs provided for there.

6.2.5 Resources for Asset Management Plan

Goulburn Valley Water has a program to establish criticality and revise condition ratings for all individual assets and establish a more robust 20 year asset replacement program. Provision for the cost of this initiative has been included in the Water Plan and it estimated to cost $265K p.a.

A key driver for this initiatives stem from the Maunsell audit report for the WSAA Asset Benchmark Study, noting that the majority of the recommendations have yet to be implemented.

The forecast expenditure includes the creation of 3 new positions. The first position is for an engineer to oversee GVW's above ground asset replacement program (upgrading of treatment plants, pump stations and storages). The intention is for this position to develop a 7 year above ground asset replacement program based on actual condition of assets rather than the age of assets. The second position is the creation of a data management coordinator. This position is required to improve the quality of existing GIS data and update old plans which are based on old Council plans. The third position is required to integrate management systems including HACCP, OHS and environmental.

Goulburn Valley Water advises that recent audits conducted for the ESC indicate that Goulburn Valley Water should focus on improving its performance in this area.

The review team considers that the investment proposed by GVW to improve its asset management systems is prima facie necessary and prudent. This is based on the recent (and previous) discussions and information on GVW's asset management systems that indicate while these systems are sound there is scope for improvement. The focus on enhancing data management systems to better target expenditure and ensure that replacement and improvement programs are economically efficient is supported.

As a preliminary view, the review team considers that the focus of improvement in the three broad areas of asset management system performance improvement nominated by GVW is appropriate and justified but that this should not require the level of resourcing contemplated at least ona longer term basis.

This has been considered under **Section 6.2.2** and the costs provided for there.

6.2.6 Community Engagement integrated into specific projects

Goulburn Valley Water proposes to increase the level of community engagement into specific projects. This includes the creation of 2 new positions. The first position is that of a Community Engagement Officer to support an existing Public Relations Coordinator. The second position is the creation of a Customer Service Coordinator.

The review team notes that GVW is responding to perceived regulator views on the Corporation's community engagement performance but does not have specific supporting information. GVW provided an example (a corporate EPA Licence) where regulators are clarifying expectations in relation to community engagement.

Goulburn Valley Water advises that through reviews of existing projects that auditors, government agencies and government departments have suggested that it should increase the level of public

consultation conducted. The Community Engagement officer role will enable Goulburn Valley Water to increase the number of press releases, information bulletins, surveys and focus groups.

Goulburn Valley Water has reviewed the operation of its 24 hour customer service centre. The centre is divided into 3 teams or sections including a customer service team (faults and monitoring of SCADA), revenue team (billing and meter reading) and property team (new connections and Council planning schemes). Two of the teams are managed on a part time basis by district managers who have a strong asset focus and manage the response to system faults. The new customer service coordinator will relieve the district managers of this responsibility and ensure that the customer service centre has a customer focus. The review team also notes that a permanent customer reference committee is a new initiative by GVW.

The review team independently understands that there is benefit in, and a necessity for, GVW boosting its community engagement and consultative effort - particularly into its significant capital projects - and to that extent this "new" activity is justified and appropriate. However the need as described by GVW appears to go beyond this. The review team remains sceptical that two additional positions on a "permanent" basis are required or that the expenditure should be built into the regulatory operating expenditure base.

These have been considered under **Section 6.2.2** and the costs provided for there.

6.2.7 Water Conservation Strategy

Goulburn Valley Water has developed a water conservation strategy based on its Statement of Obligations and Water Supply Demand Strategy. It is proposing to undertake a range of initiatives including training of trade professionals, training of Goulburn Valley Water staff, undertaking retrofits of high outdoor water users plumbing, improving water meter accuracy and reducing leakage in its distribution system.

The cost of the strategy is based on a full time position at $90K p.a. and estimated costs for the above programs. This position would also be required to administer the waterMAP program (customers using more than 10ML p.a. in 2006/07) which for Goulburn Valley Water will involve 73 customers with a total usage in excess of 7000 ML p.a. Goulburn Valley Water has estimated that the administration and ancillary costs of implementing this program would be $80K p.a. (including training of GVW staff and external service providers, leakage detection support, improved metering).

The review team understands that GVW has not included in the potential future opex an allowance for administration of the waterMAP program. GVW has advised that the likely expenditure for this activity would be $30K p.a.

The review team considers that this program is consistent with Goulburn Valley Water's Statement of Obligations and the requirements of the Water Supply Demand Strategy and represents a new activity and additional costs. The review team has sighted the budget breakdown for the range of activities to be undertaken for the water conservation strategy. Some of these might arguably be included in the existing opex base or be accounted for in the growth allowance in the Target BAU Opex.

On balance, while the review team may have a different view of the cost of the component activities and the additional expenditure associated with them, it considers that at a global level additional expenditure of $170K in the first year (including set-up of the program) and $130K p.a. for ongoing activities in the remaining four years as reasonable and prudent. This is consistent with the amount indicated by GVW in **Table 5-3**.

This expenditure should be reviewed for the next regulatory period as to whether this level of expenditure is justified on a continuing basis and whether it should continue to be included in the BAU Opex base then.

6.2.8 Water Supply Demand Strategy (WSDS)

Goulburn Valley Water's Statement of Obligations requires it to prepare and submit to DSE a Water Supply Demand Strategy every 5 years commencing on 31 March 2007. The strategy must comply with written guidelines issued by the DSE. Section 4.3.10 of Goulburn Valley Water's Water Plan states that the cost of preparing GVW's first Water Supply Demand Strategy was greater than $500K and that this amount was not budgeted for at the time. That is, this expenditure is not in the BAU Opex base at 2006/07.

The review team considers that preparation of a WSDS every 5 years does represent at least a partly "new" obligation and is not wholly in the 2006/07 BAU Opex base. The preparation of a water supply demand strategy every five years is a prudent exercise to undertake given climate and population change.

GVW has advised that the expenditure for the previous water supply strategy project which was undertaken across 2005/06 and 2006/07 was:

- 2005/06: $195,500
- 2006/07: $320,300

That is approximately 62% of the expenditure for this project is in the 2006/07 base.

In its current Water Plan GVW has provided for $595K in the period (derived from the Variance table provided by GVW) with the bulk being planned for 2010/11 ($310K) and 2011/12 ($265K). GVW provided separate advice on the split-up of this expenditure (which does not quite match the

amount in the Variance table, presumably because of miscellaneous early expenditure). The expenditure split-up is advised as follows:

- In-house resources - $73.25K
- External resources - $435K
- Contingency - $51K
- ***Total - $560K***

The above costs are based on the costs incurred in the preparation of GVW2055. GVW advised that the funding of GVW2055 was "unbudgeted" and from a business viewpoint it decided to reprioritise activities and absorb these costs through the deferral of other programs.

GVW also considers that each time it undertakes a water supply strategy review exercise (every 5 years) that it will involve a repeat of the effort and scope of works required to complete GVW2055.

GVW advised that the 2007 report involved the following activities:

- Update of existing growth forecast for each system based on Victoria in Future data
- Update of the existing demand forecast taking into account latest collected data and the modified growth forecast
- Update of existing REALM models
- Model output and review for base case, medium and past 10 year climate scenarios based on CSIRO climate modelling
- Preparation of Stage 1 yield and demand modelling report
- Review of existing Master Plan strategies to accommodate demand scenarios
- Preparation of GVW2055 report
- Community engagement program

For the next review, GVW expects:

- Revised growth forecasts from the State government necessitating update of the existing growth forecast
- A need to update the existing demand forecast taking into account the latest collected data and the modified growth forecast
- Update of existing REALM models taking into account stream flow data from new gauging stations installed as an outcome of the first study
- Totally revised climate scenarios having regard to the detailed studies proposed by the Federal Government
- Preparation of Stage 1 yield and demand modelling report
- Review of existing Master Plan strategies to accommodate demand scenarios with a potential to introduce and need to evaluate new alternatives
- Preparation of final WSDS report
- Community engagement program equivalent to the first study.

GVW therefore expects to incur costs equal to or greater than the original 2006/07 study.

Notwithstanding this the review team considers that the development of a second plan should be materially easier to prepare than the first plan. It is acknowledged that new issues will potentially arise in the intervening 5 years, water supply and demand policy is continually evolving and much of the data collection and analysis may need to be repeated. On other hand many of the imperatives or underlying drivers will be little changed and/or the urgency and need for a very detailed review may be less.

On balance the review team considers that a prudent and reasonable allowance for expenditure on this activity (*not already in the BAU Opex base*) is $150K split between 2010/11 ($100K) and 2011/12 ($50K).

[NB: Even this might be arguably too high, as the review team has derived this by taking the cost in 2006/07 already in the BAU Opex base ($320K) off the proposed amount ($510K, which excludes the contingency amount) and assuming that 20% less effort will be required in the next strategy review.]

6.2.9 Customer Meter Testing Program

Goulburn Valley Water has assessed the impact of the potential adoption of a new Australian Standard (A3565.4 - 2007) for the replacement and testing of its water meters. GVW anticipates that there will be a change to the standard, which will cost $100K p.a. and commence in the first year of the regulatory period.

The review team considers that the cost associated with this item would be a new obligation with additional expenditure (noting that if so the additional activities proposed are fair and reasonable). However there does not appear to be certainty that the standard would until towards the end of the regulatory period (or may not change during the regulatory period at all).

The review team considers that a prudent and reasonable allowance would be to allow for $40K in 2010/11 and $80K in the final two years of the regulatory period. Alternatively no provision could be made now and if this activity is required (i.e. the industry standard does change) and the impact is material an adjustment could be made during the period or in the next regulatory period.

6.2.10 Desludge, FAL Rating, WSAA/NWI Audit & Asset Revaluation

GVW has provided the review team with the following further information for this "variance" explanation item:

- Biosolids Management
  - $40K p.a. planned (total $200K)

- Biosolids management costs were budgeted at $527,000 in 2007-08. The Sludge Management Strategy March 2007 is the basis of the budget in the Water Plan, with costs averaging $572k p.a. for the regulatory period

- FAL Rating
  - $30K p.a. in each of 2009/10 and 2012/13 (total $60K)
  - GVW pays a financial accommodation levy to Treasury on our borrowings. The amount of the levy is determined by GVW's credit rating. GVW is required to update its credit rating via a ratings agency every three years.
- WSAA/NWI Audit
  - $25K p,a (total $100K)
  - GVW participates in WSAA benchmark reporting. This reporting has now been extended to incorporate National Water Commission data requirements and the NWC require that the data is to be independently audited each year (was audited previously every three years).
- Asset Revaluation
  - $40K in 2009/10
  - Accounting standards and the Department of Treasury and Finance require that land and buildings are re-valued every 5 years.

The review team considers that of these items, only the additional biosolids management costs are not in the BAU Opex base (as well as being reasonable and prudent).

The other items, while necessary to undertake, are essentially either in the BAU Opex base and/or part of the "swings and roundabouts" for expenditure on smaller activities which vary from year to year.

The review team proposes that $40K pa. be the acceptable contribution to the explanation of Variance from Target BAU Opex.

6.2.11 Roads Act – Council Passing on New Costs for Road Reinstatement

A new Road Management Act was introduced during the first regulatory period which led to a new state wide process for obtaining approval to undertake works in a road reserve. There was an associated schedule of fees for applications which replaced fees that were previously set by Councils.

GVW has advised that the additional expenditure it is incurring relates to the reinstatement of roadways associated with network maintenance activities and is considered to be an operating cost. The introduction of the Roads Act has prompted all councils to revisit road opening management

and charges. In the case of GVW's Central District, a high proportion of water mains are located under road seal and from 2007-08 council transferred responsibility for road reinstatement to GVW.

Based on the unit rates, historic frequency of repairs and allowance for additional administration, the estimated increase is $75K p.a. Consequently, the budget for water main maintenance (of which this is part) for 2006/07 of $136.8K has been increased to $213K for 2007/08. Further, the actual expenditure to 31 January 2008 for water main maintenance in the Central District is $194.4K, which is trending to a yearly total of $330K. The over budget trend is largely attributable to an increased frequency of main repairs under drought conditions.

GVW's also indicates that it is served by six other municipalities that continue to manage road reinstatement services. Consequently if these councils follow suit, GVW faces the risk of higher costs in the future than have been allowed in the Water Plan.

The review team has at this stage the review team considers that the appropriate amount acceptable for contributing to the Variance from Target BAU Opex is $50K p.a., noting that it is understood that some component of this was provided for in the regulatory Opex base in the previous Water Plan.

6.2.12 New OHS Initiatives Customer Meter Changeover – Electrocution Risk

New OHS legislation was introduced during 2007 and Goulburn Valley Water has identified a number of new OHS initiatives.

Goulburn Valley Water has proposed to spend $55K p.a. on an updated process for replacing meters which will reduce the risk of electrocution, $5K per year on portable electrical safety inspections, $10K every second on complying with new boating requirements, $17K per on worksite safety traffic management, $18K per year on defensive driver training, $70K per year on resources to introduce and manage compliance systems and $30K per year on the implementation of AS/NZ 4801.

SKM is aware of new OHS legislation and issues that arose during the first regulatory period and believes that it is prudent for GVW to undertake these activities (as part of meeting its legislative obligations) and that the level of expenditure proposed is reasonable (and represents a new cost). The range of activities described by Goulburn Valley Water appears fair and reasonable based on the information provided.

No adjustment is recommended for this item at this stage and the amount planned is considered as contributing to the Variance from Target BAU Opex.

6.2.13 Greenhouse Strategy

Goulburn Valley Water has developed a greenhouse gas strategy in response to its EPA licence and Statement of Obligation requirements. Goulburn Valley Water proposes to conduct greenhouse emission and impact awareness training, commit additional resources to power and tariff management, undertake pilot power management studies to evaluate opportunities for optimising the operation of mechanical wastewater facilities and undertake a power factor correction study. GVW does not propose to purchase green energy or carbon offsets.

GVW has provided a breakdown of its greenhouse gas budget which includes operation of online DO probes at Shepparton WMF ($2K p.a.), WMF Aerator Efficiency Evaluation Consultancy ($30K), Power Factor Correction Consultancy ($25K), Employee Awareness Training Consultancy ($40K in total over 08/09 and 11/12) and a Project Management Resource ($90K).

It is arguable whether some of the proposed additional expenditure should be BAU Opex (or is at least in part in the current base) and/or should be more appropriately classified as Capex. The need for inclusion of a dedicated project management (albeit at 0.5 FTE) in new/additional expenditure (i.e. additional to other resources) is also arguable.

The review team considers that the expenditure is justified and prudent and considers a notional $40K p.a. appropriate in terms of contributing to the Variance from Target BAU Opex (with the resource component being considered under **Section 6.2.2** and the costs included in Line Item 3, **Table 6-7.**

6.2.14 Other Items

In addition to those items considered in detail above there some 24 further items that GVW initially identified as being new activities involving new/additional expenditure associated with them and which should be included in the new BAU Opex base. These items generally involve a less significant quantum of expenditure than those considered in detail above. Eight (8) of these have been identified explicitly and 16 have been lumped together in **Table 6-3** (and **Table 6-7)**.

Specific Other Items (8 Items): These include expenditure on Sustainability initiatives, additional targeted odour modelling studies, Sewerage System Management Plan, Cleaner Production Program, Terrorism Plan Preparation and Audit, AS/NZ 4801 Management System Implementation, Northern Region SWS and Mixing Zone Obligations.

In aggregate the review team considers that the expenditure estimates associated with these items as reasonable and that the expenditure proposed is broadly justifiable and prudent. However in assessing the component as being appropriate in terms of contributing to the Variance from Target BAU Opex, the review team has reduced the expenditure amount as it considers that part of it could be considered to be in the existing BAU Opex base (and/or in Capex).

In aggregate the amounts assessed as contributing to the Variance from Target BAU Opex for these 8 items is $1.01M compared with $1.31M proposed by GVW. The profile of this expenditure in aggregate for those items would then be $270K, $120K, $235K, $170K and $235K in the respective years of the regulatory period.

Miscellaneous Items (16 No.): There are 16 items with relatively small levels of expenditure associated with them that have been put forward by GVW as part of **Table 5-3**.to explain the Variance from Target BAU Opex. These items are: Defensive Driver Training, R&D - Water Quality Research Australia, SDWA audits (3 No.) & staff commitment, Water quality samplers training and accreditation, Worksite Safety Traffic Management, OHS System Audits, Environmental Management System, Regulated supplies RMP and audit, Facilitated emergency exercise (Terrorism), Compliance with New Boating Requirements, Smart Water Fund, National Water Reporting Audit, Portable Equipment Electrical Safety Inspections, Prescribed Chemicals Manifest, Ecological Risk Assessment for River Discharges and Non Residential Main to Meter Replacement.

These have been lumped together because they individually constitute either an amount that is less than $50K in aggregate over the regulatory period or are activities that would be expected to be part of normal prudent business practice.

These items total $1.03M over the 5 years of the regulatory period (with a profile of $240K, $133K, $233K, $163K and $263K in each of the respective years of the period).

These 16 items have not been considered in detail specifically because of the minor expenditures involved. However the review team considers that this total sum is not appropriate for inclusion as justifying the Variance from Target BAU Opex. This is because the expenditure on these activities could be considered to be part of normal BAU Opex and/or covered by the growth adjustment in the Target BAU Opex and/or part of the ”swings and roundabouts” of business expenditure on minor activities from one year to the next. This outcome is reflected in **Table 6-7**.

6.2.15 Summary

Table 6-7 summarises the review team’s view of the items put forward by GVW (**Table 6-3**) to explain and justify the positive Variance from Target BAU identified in **Table 5-2**.

In summary the review team’s assessment of justifiable and reasonable explanations of the Variance to Target BAU Opex indicates that there is a positive difference in each year of the regulatory period (and also in aggregate). That is the Variance from Target BAU Opex (as indicated in **Table 6.2**) has been fully explained. This implies that in each year and over the regulatory period as a whole GVW will achieve the minimum specified 1% p.a. productivity target (after adjustment for growth).

The review team therefore recommends that no specific productivity adjustment is required for GVW and this is shown as zero in Change Item 3, **Table 6-8**.

- **Table 6-7: Review Team's Assessment of Items Proposed by GVW as Explanations of Variance from Target BAU Opex (Real 1/1/07 $M)**

Line Item	Description	Forecast Expenditure ($ 000 - real Jan 2007)					
		2008/09	2009/10	2010/11	2011/12	2012/13	Total
1	Electricity Costs - real cost increases (included by the review team)	501	624	680	710	739	3,254
2	New Opex from Capex	171	306	430	506	700	2,113
3	Labour - real base labour cost increases (06/07 nos.)	295	446	598	753	909	3,001
4	Labour cost - New positions (all categories)	486	738	747	757	766	3,494
5	New resources to efficiently administer SDWA and regulations	New resources costs included in Line Item 3					-
6	Resources for Asset Management Plan	New resources costs included in Line Item 3					-
7	Community Engagement integrated into specific projects	New resources costs included in Line Item 3					-
8	Water Conservation Strategy (new labour cost in Line Item 3)	90	70	70	45	25	300
9	WSDS (Water Supply Demand Strategy)	62% of Costs understood to be in 2006/07 cost base					
10	Customer Meter Testing Program	-	-	40	80	80	200
11	Desludge, FAL Rating, WSAA/NWI Audit & Asset Revaluation	40	40	40	40	40	200
12	Roads Act - Council Passing on New Costs for Road Reinstatement	50	50	50	50	50	250
13	Resources to Introduce & Manage Compliance Systems	New Resources costs included in Line Item 3					-
14	Greenhouse Strategy	New Resource costs included in Line Item 3					200
15	Customer Meter Change Over - Electrocution Risks	55	55	55	55	55	275
16	Sustainability	-	-	50	50	50	150
17	Odour Modelling Studies	50		50		50	150
18	Sewerage System Management Plan	45	30	45	30	30	180
19	Cleaner Production Program	35	35	35	35	35	175
20	Terrorism Plan Preparation and Audit	20	20	20	20	20	100
21	AS/NZ 4801 Management System Implementation	30	30	30	30	30	150
22	Northern Region SWS	50	-	-	-	15	65
23	Mixing Zone Obligations	40	-	-	-	-	40
24	Various Miscellaneous Items (16 items)	-	-	-	-	-	-
25	**Total**	**1,998**	**2,483**	**3,080**	**3,251**	**3,634**	**14,447**
26	Variance from Target BAU Opex	1,500	1,846	2,152	2,234	2,402	10,134
27	**Difference**	**498**	**638**	**928**	**1,017**	**1,232**	**4,313**

6.3 Recommendations

Table 6-8 outlines the review team's recommendation on proposed changes to GVW's regulatory Opex over the second regulatory period. There is a slight increase recommended which is associated with the fact that GVW has made no or a somewhat low allowance for real increases in electricity and labour.

Table 6-8: Recommendations on Changes to GVW's Proposed Regulatory Opex

Change Item	Item/Description	Forecast	$M				
			2008-09	2009-10	2010-11	2011-12	2012-13
1	Electricity - real cost increases relative to 2006/07, includes **:for price effect existing demands** **:new demands price and demand effects**	Original Water Plan:	2.33	2.38	2.38	2.43	2.48
		Recommended Revised:	2.56	2.68	2.74	2.77	2.80
		Recommended Net Change:	0.23	0.30	0.36	0.34	0.32
2	Labour Cost - real costs increases not reasonably provided for **[Refer Table 6.6]**	Original Water Plan:	12.69	12.73	12.89	13.00	13.04
		Recommended Revised:	12.53	12.93	13.09	13.25	13.42
		Recommended Net Change:	-0.17	0.20	0.20	0.25	0.38
3	Additional "Productivity" Contribution [to achieve ESC specified minimum productivity improvement of 1% pa (after growth)]	Original Water Plan:					
		Recommended Revised:	0.00	0.00	0.00	0.00	0.00
		Recommended Net Change:					
Total Recommended Net Change:			$ 0.06	$ 0.50	$ 0.56	$ 0.59	$ 0.70
Original Water Plan Total Regulatory Opex:			$ 31.17	$ 31.70	$ 32.18	$ 32.45	$ 32.81
Recommended Revised Total Regulatory Opex:			**$ 31.24**	**$ 32.20**	**$ 32.74**	**$ 33.04**	**$ 33.50**

References

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Sinclair Knight Merz, November 2006, *Bonnie Doon Water Supply – Quality and Strategy Master Plan*, Final Report, November 2006.

Goulburn Valley Water, November 2007, *Goulburn River to Broadford Pipeline*, Submission for Approval of the Project by the Treasurer of Victoria and the Minister for Water, November 2007.

Appendix A Futures Price of Electricity

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

Electricity futures lose some spark

Stephen Wisenthal

Financial Review 16 January 2008

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 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.

"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.

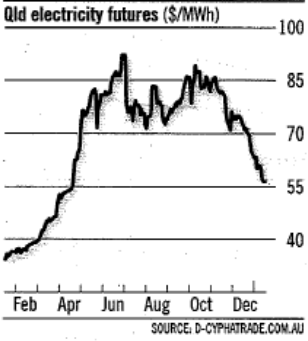
Origin and AGL are both working to increase the proportion of their electricity sales that they generate themselves. Origin is spending $1.3 billion to build a 630 megawatt power station near Dalby, fuelled by gas from its coal-seam methane fields.

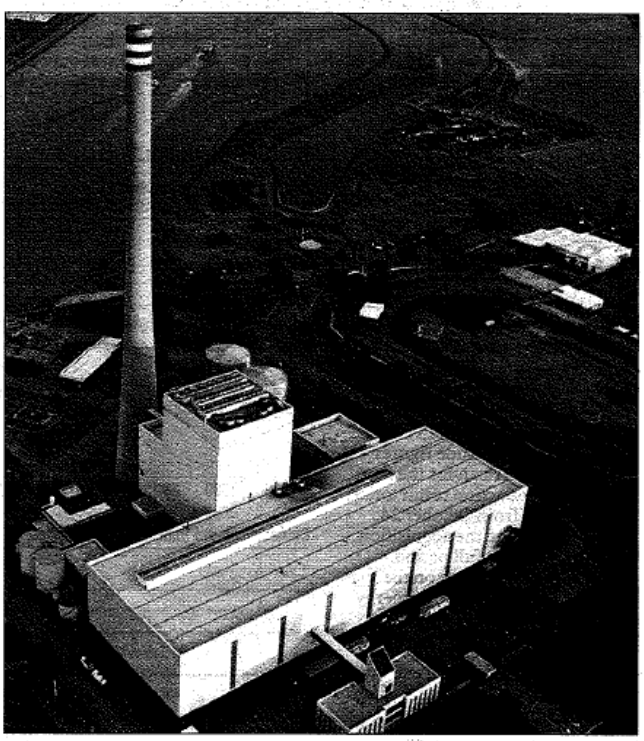
And AGL has locked in electricity supply from a power plant that Queensland Gas is building on its coal-seam methane fields.

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."

Sparking interest





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