Expenditure Forecast Review for the Victorian Regional Urban Water Businesses

- WESTERN WATER

  Assessment of Expenditure Forecasts

  FINAL REPORT
- 4 April 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. Western 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 Western 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**

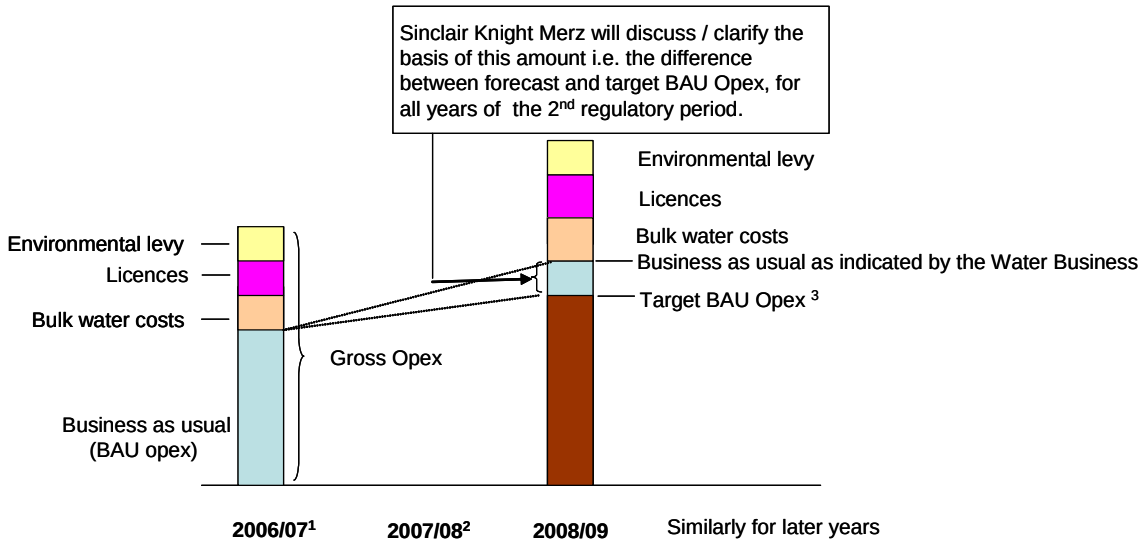
Where **A** is the Growth Adjusted Target BAU OPEX for year n;

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 Western 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 (e.g. accommodation) were not regarded by the review team as contributing to the increased operating expenditure above the Target BAU Opex.

3.2.5 Limit of Materiality

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

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

3.2.6 Demand forecasts

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

3.2.7 Adjustments Principles

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

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

4. Western Water: Overview

The initial approach to the review of the Water Plan expenditure forecast for Western 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 as communicated to Western Water on 20 November 2007 in the File Note titled "Western Water: 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 Western Water personnel on 3 December 2007;
  - Additional information provided by Western Water in response to the issues identified in the File Note and to queries arising out of the meeting on 3 December;
  - A second meeting and discussion of the expenditure forecasts and key issues with relevant Western Water personnel on 7 March 2008;
  - Additional information provided by Western Water in response to the issues identified at the second meeting and in the review team's draft report;
  - Various follow up discussions.

4.1 Key Issues

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

- Western Water's aggregate expenditure forecasts over the second regulatory period are $128.59M for the Capex program and $207.25M for Opex.
- Large increases are forecast between the most recently audited full year's operation (2006/07) and the end of the second regulatory period (2012/13) in electricity (129%), chemicals (151%) and purchase of water (283%).
- The expenditure associated with bulk water purchases (from Melbourne Water) is planned to increase dramatically throughout the second regulatory period. Expenditure for bulk water purchases, as a proportion of total Opex in the respective years, increases from 23.7% (2006/07) to 24.3% (2007/08), 26.1% (2008/09), 30.3% (2009/10), 36.7% (2010/11), 41.1% (2011/12) and 47.7 (2012/13). [Refer **Table 6-1**.]

5. Capital Expenditure (Capex)

Table 5-1 presents Western Water's forecast capital expenditure, both by asset category and by cost driver.

- **Table 5-1: Western Water: Historical and Forecast Capital Expenditure**

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	**25.20**	**22.47**	**34.46**	**38.15**	**33.38**	**24.25**	**16.92**	**15.88**
Gross capex - business as usual	25.20	22.47	34.46	38.15	33.38	24.25	16.92	15.88
Gross capex - new obligations				-	-	-	-	-
Approved 1st period gross capital expenditure	27.04	17.96	28.35					
Average annual 1st period capex	27.38							
Average annual 2nd period capex	25.72	Annual 2nd period capex is on average 6% lower than the 1st period						
Breakdown of business as usual gross capex								
Water headworks	5.70	0.37	0.13	0.21	0.50	0.35	0.43	0.23
Water pipelines / network	2.76	3.38	3.85	5.13	5.76	12.30	5.44	3.14
Water treatment	0.80	2.99	2.27	1.30	0.83	0.95	0.36	1.28
Water Corporate	1.16	2.53	0.74	0.75	1.01	2.46	2.22	0.76
Water sub-total	***10.41***	***9.27***	***6.99***	***7.39***	***8.10***	***16.05***	***8.44***	***5.40***
Sewerage pipelines / network	6.20	2.54	7.40	9.73	5.49	2.61	2.71	2.78
Sewage treatment	6.34	7.07	15.07	16.10	15.52	2.29	1.21	0.49
Sewerage Corporate	1.58	2.11	2.64	2.87	2.73	0.92	0.98	0.81
Sewerage sub-total	***14.12***	***11.72***	***25.11***	***28.70***	***23.75***	***5.82***	***4.90***	***4.08***
Bulk Water sub-total	-	-	-	-	-	-	-	-
Recycled water	0.67	1.47	2.36	2.06	1.53	2.38	3.57	6.41
Rural Water	-	-	-	-	-	-	-	-
Breakdown of BAU gross capex by cost driver								
Renewals				7.66	7.03	6.45	5.38	6.55
Growth				26.04	19.74	12.34	7.08	3.38
Improved service				0.18	1.27	0.98	0.18	1.52
Compliance				0.67	1.62	0.66	0.41	0.43
Government contributions				-	-	-	-	-
Customer contributions				3.60	3.73	3.83	3.88	4.01

5.1 Deliverability of the Capex Program

It is noted in respect of capital delivery performance that:

- average annual capital expenditure across the Water Plan period is forecast to be $25.7M compared to actual annual average delivery of $23.8M over the first two years of the current Water Plan
- there is a peak to the Capex profile in 2008/09 (largely the result of the Melton suite of projects); and,
- excepting for 2008/09 and 2010/11 the proposed size of the capital program appears to be within the scope of that which has been previously delivered.

Western 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. It does not consider that this poses a threat to the delivery of its' capital works program as:

- Western Water is currently experiencing high interest in major projects currently being constructed.
- Western Water attracted 8 tenders for the Melton Sewerage Upgrade (including 8 expressions of interest for the pipe bridge), 6 tenders for the Bacchus Marsh Sewerage Upgrade, 5 tenders for the Melton Recycled Water Plant upgrade.
- To date Western Water has generally enjoyed success with engaging competent and experienced small to mid-sized contractors to deliver the works.
- Western Water's location is suitable to attract both Melbourne and regional based contractors.
- Western Water is viewed in the industry as a valuable client and a significant portion of contractors working for Western Water are repeat business.
- Western Water ensure that it communicates to the contracting industry its upcoming works.

The review team considers that delivery of Western Water's capital program will be challenging. However, the review team considers that Western Water is better placed to deliver its program in comparison to other authorities for the reasons generally stated above and more particularly because its largest project (Melton Upgrade $26.3M) has already been tendered and should soon be awarded.

5.2 Key Projects

Western Water's Water Plan forecasts $128.6M of capital expenditure over the regulatory period. The top seven projects make up nearly $ 37.0M (29%) of this, and are listed in **Table 5-2**.

- **Table 5-2: Western Water: Key Projects**

Expenditure in $ 000's real (1/1/07)	1st period	SECOND REG PERIOD						% of total Capex
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	Total	
Capital Expenditure								
Key projects								
Merrimu Water tank	-	200	2,800	-	-	-	**3,000**	***2%***
Melton RWP	-	4,800	440	2,000	10,560	-	**17,800**	***14%***
Melton Outfall Sewer	-	8,500	-	-	-	-	**8,500**	***7%***
Woodend RWP Upgrade	-	1,800	3,400	-	-	-	**5,200**	***4%***
Bacchus Marsh RWP	-	250	716	500	1,000	-	**2,466**	***2%***
Total	**-**	***15,550***	***7,356***	***2,500***	***11,560***	**-**	**36,966**	***29%***
% of total Capex in the financial year indicated		41%	22%	10%	68%	0%		

5.2.1 Merrimu Water tank

The Merrimu Water Tank supplies water to Bacchus Marsh and Melton high level zone. Significant growth is expected to occur in Melton South. There is an existing 5 ML tank on site and options were assessed to construct two additional 5 ML tanks over time or one additional 10 ML tank. The option to construct one 10 ML tank was found to be cheaper on an NPV basis and also avoided the need to acquire additional land from a nearby owner which may have led to project delays. The review team considers the project to be justified on the basis of it being required to service new development / growth.

Western Water supplied a cost estimate broken down into a mix of phases and activities. The total cost of the project is $3.06M or $280K per ML. The unit cost of the project is similar to the unit cost of other tanks of this size and is considered reasonable.

The program to implement the tank over the 2009/10 and 2010/11 financial years is considered achievable given the functional design work that the view team understands has been done to date, given that Western Water own the tank site and given that the site already has an existing tank.

No changes are recommended to be made to this project.

5.2.2 Melton RWP

The Melton RWP currently treats sewage from township of Melton to class C standard and discharges it to pasture on land currently owned by Western Water. It is proposed to augment the plant to accommodate growth that is forecast to occur in Melton South and to provide effluent of suitable quality for supply to a new Melton Class A recycled water plant. The new class A plant is not included in the costs of upgrading the Melton RWP.

In its Draft Report the review team indicated that it understood the primary driver for the project is growth, but that it was not clear based on the verbal information supplied by Western Water whether some of the cost associated with the project was to make the plant's effluent suitable for feed to a Class A plant. Based on a functional design report subsequently supplied by Western Water the review team has confirmed that the driver is forecast growth. The review team notes the high growth rate forecast for Melton and considers that the project is justified.

The upgrade is estimated to cost $17.73M and be able to treat 9.3 ML/D. The cost estimate provided was broken down into seven different sub-parts including, sedimentation tank ($4.2M), RAS and WAS Pumping Station ($1.2M), Denitrification Works ($0.8M), Wet Weather Storage ($1.4M), Primary Sedimentation Augmentation ($1.4M), aeration tanks ($6.1M) and sludge treatment capacity ($3.1M). The functional design report supplied by Western Water provided detailed cost breakdowns for each of the above components and demonstrated a robust cost

estimating methodology (schedule of quantities) was used. The review team considers that the cost estimate is reasonable.

The review team considers this cost to be reasonable when compared to other projects of a similar size and function. No changes are recommended to this project.

5.2.3 Melton Outfall Sewer

The township of Melton is currently connected to the Melton RWP by a pumping station and rising main. It is proposed to replace these works with a new 6.2 kilometre long gravity outfall sewer of diameter DN1200 mm and DN1350 which has sufficient capacity to accommodate existing development and growth. The pumping station and rising main were built in 1979 and have not been substantially augmented since that time and are now too small.

The review team understands that options were assessed to build a new pumping station and rising main, but that a gravity outlet was preferred. The review team noted in its draft report that it did not sight the analysis regarding this issue, but understands a submission was made to DTF and approved. Western Water subsequently provided the DTF report to the review team and the review team notes that it contains a summary of the options assessment that was undertaken. The options assessment provided a qualitative description of the outcomes rather than a quantified costing of each option. The review team is however satisfied that there is sufficient evidence to indicate that the option chosen has been assessed in appropriate detail and represents the lowest economic cost.

The review team noted in its Draft Report that the Melton Outfall Sewer is expected to cost $8.5M and has a unit construction cost of approximately $1.05 per metre per millimetre. The sewer is considered to be very deep in parts. The cost of the project appears lower than what the review team would have expected, but the review team understands that the cost is based on an accepted tender with adequate allowance for contract variations. The review team therefore considers that the estimate of the project is reasonable.

Further to the above, the DTF submission indicates that the cost of the project is actually $13.3M and not $8.5M as indicated in Table 5-2. Following discussions with Western Water it became clear that the difference was included in the 2007/08 year and is expected to be spent in April, May and June of 2007/08 (primarily on materials). The review team considers that the total cost of the project at approximately $1.80 per metre length per millimetre diameter as being more realistic than what it had originally determined. The review team's view remains of the view that the quantum of expenditure is reasonable and prudent based on a tendered cost.

The review team considers that the project is well placed to be constructed in the first year of the second regulatory period given that DTF approval has been obtained and a contract awarded. Furthermore, a large portion of the expenditure for 2007/08 will go towards materials.

No changes are proposed to this project at this time.

5.2.4 Woodend RWP Upgrade ($5.25M)

The Woodend RWP currently discharges to a nearby creek and the plant is at risk of breaching EPA licence conditions. The plant has a capacity to accommodate an equivalent population of 3,000 people.

The review team indicated in its Draft Report that it generally considered the cost estimate for the plant to be reasonable. However, the review team also indicated that it understood a business case had been submitted to the DTF.

Western Water subsequently supplied an Investment Evaluation Report that the review team understands has been submitted to the DTF. The investment evaluation report indicates that the RWP was constructed in 1980 and underwent a limited upgrade in 1999. The plant currently services a population of 3600 people and this is forecast to increase to 5762 people by 2021. Without the upgrade the existing plant will be overloaded.

In further support for the proposal Western Water attached a letter from the EPA that states "EPA notes the new plant upgrades to the Melton and Bacchus Marsh WWTPs along with ongoing upgrades to the Sunbury, Gisborne and Woodend WWPPs to deliver improved treatment performance and ensure ongoing regulatory compliance." The review team considered whether the program was justified given that the EPA did not support the projects, but rather noted them and given that the EPA had supported other initiatives proposed by Western Water. However, the review team considers that the project is justified on the grounds of accommodating growth regardless of the EPA's position.

The investment evaluation report contains a detailed break down of the cost of the plant, including a two page bill of quantities estimate. The total estimated cost of the plant is $6.1M compared to the $5.2M shown in **Table 5-2**. The review team queried the difference between the two figures to ascertain whether the difference had been spent in the 2007/08 financial year. The review team was advised that the initial cost in the Water Plan had been underestimated. The review team considers that the cost of the plant should be increased consistent with the detailed cost estimate provided.

In summary the review team considers the project to be justified, the expenditure reasonable and prudent and has increased expenditure by $0.9M in the year 2010/11 (in line with the detailed costs estimate provided for assessment).

5.2.5 Bacchus Marsh RWP ($2.5M)

The Bacchus Marsh RWP is being augmented to accommodate increased growth in the township of Bacchus Marsh. The plant currently discharges to land and it is proposed to continue to discharge to land.

The review team noted in its Draft Report that the reasonableness of the cost of the plant had not been assessed, pending information regarding the size of the new plant. Subsequently Western Water provided the review team with a report prepared by Beca.

Similar to the discussions regarding other plant upgrades the report produced by Beca demonstrates that the plant is required to service growth and the report considers various sub-options for the plant upgrade The cost estimate in the Beca report was based on a detailed schedule of quantities which totalled $2.345M. This was slightly different than the cost shown in **Table 5-2** ($2.466M), but the review team confirmed with Western Water that this was due to an inflation adjustment.

The review team considers that the project is justified and the cost estimate reasonable and the review team consider that no changes should be made to the project.

5.3 Recommendations

The review team recommends that no adjustment be made to Western Water's capital expenditure forecasts other than:

- The cost of the Woodend Recycled Water Treatment Plant be increased by $0.9M (2010/11).

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

- **Table 5-3: Western Water: Preliminary Recommended Changes to Regulatory Capital Expenditure Forecast**

Change Item	Project/Description	Forecast	$M						
			2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	RP3
1	Woodend Recycled Water Plant	Original Water Plan:		1.80	3.40				
		Recommended Revised:		1.80	3.40	0.90			
		Recommended Net Change:				0.90			
Total Recommended Net Change:			$ -	$ -	$ -	$ 0.90	$ -	$ -	
Original Water Plan Total Regulatory Capex:				$ 38.15	$ 33.38	$ 24.25	$ 16.92	$ 15.88	
Recommended Revised Total Regulatory Capex:			**$ -**	**$ 38.15**	**$ 33.38**	**$ 25.15**	**$ 16.92**	**$ 15.88**	

6. Operating Expenditure (Opex)

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

Large increases are forecast between the most recently audited full year's operation (2006/07) and the end of the second regulatory period (2012/13) in electricity (129%), chemicals (151%) and particularly purchase of water (283%). Western Water has provided explanations for these increases which are described later in this Section.

The key contributors to the increase are:

- Purchase of water (65% of total increase);
- Salaries and on-cost (13% of total increase).

The costs for the purchase of water are especially significant with the forecast increase being from $6.5M in 2006/07 to $24.8M in 2012/13.

- **Table 6-1: Western Water: Historical and Forecast Operating Expenditure by cost driver**

Expenditure in $ 000 real (1/1/07)	FIRST REG PERIOD		SECOND REG PERIOD					SECOND REG PERIOD	
	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	Total	%
Chemicals	481	494	633	821	916	1,121	1,208	4,699	2%
Consultancies	738	915	1,048	994	935	991	917	4,885	2%
Electricity	1,491	1,515	1,849	2,363	1,623	3,181	3,418	12,434	6%
Purchase of Water	6,478	6,809	8,614	11,052	14,346	18,796	24,808	77,616	38%
Maintenance Contractors	4,068	4,334	5,450	5,430	5,209	5,232	5,037	26,358	13%
Salaries and On cost	7,082	7,551	8,194	8,567	8,907	9,177	9,402	44,247	21%
Other	5,735	5,089	5,940	5,949	5,902	5,944	5,970	29,705	14%
Environmental Contribution	1,300	1,268	1,268	1,268	1,268	1,238	1,268	6,310	3%
Total	**27,373**	**27,975**	**32,996**	**36,444**	**39,106**	**45,680**	**52,028**	**206,254**	**100%**
Increase over 2006/07									
Chemicals	-	13	152	340	435	640	727	2,294	3%
Consultancies	-	177	310	256	197	253	179	1,195	2%
Electricity	-	24	358	872	132	1,690	1,927	4,979	7%
Purchase of Water	-	331	2,136	4,574	7,868	12,318	18,330	45,226	65%
Maintenance Contractors	-	266	1,382	1,362	1,141	1,164	969	6,018	9%
Salaries and On cost	-	469	1,112	1,485	1,825	2,095	2,320	8,837	13%
Other	-	(646)	205	214	167	209	235	1,030	1%
Environmental Contribution	-	(32)	(32)	(32)	(32)	(62)	(32)	(190)	0%
Total	**-**	**602**	**5,623**	**9,071**	**11,733**	**18,307**	**24,655**	**69,389**	**100%**

6.1 Derivation of the Variance from Target BAU Opex

Table 6-2 below summarises Western Water's forecast operating expenditure and shows the "Variance from Target BAU Opex" derived in the manner explained in **Section 2**.

- **Table 6-2: Western Water: Historical and Forecast Opex and Variance to Target BAU Opex**

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	15.72	18.87	19.66	22.69	23.68	24.10	25.25	25.54
New obligations				0.29	0.31	0.26	0.26	0.26
Sub-total Opex	***15.72***	***18.87***	***19.66***	***22.98***	***23.99***	***24.36***	***25.51***	***25.80***
Bulk water charges	6.07	6.48	6.68	8.61	11.05	14.35	18.80	24.81
Licence fees	0.22	0.12	0.18	0.13	0.13	0.13	0.13	0.14
Enviro levy	1.34	1.30	1.27	1.27	1.27	1.27	1.27	1.27
Gross operating expenditure	**23.35**	**26.77**	**27.78**	**32.99**	**36.44**	**40.10**	**45.70**	**52.02**
Target BAU Opex			**18.72**	**19.41**	**19.84**	**20.27**	**20.80**	**21.32**
Variance from Target BAU Opex			**0.94**	**3.56**	**4.14**	**4.09**	**4.71**	**4.48**
Customers and Consumption								
Total customers ('000)	48.52	51.38	51.48	53.94	55.68	57.45	59.56	61.67
Growth relative to 2006-07	-	1.00	1.00	1.05	1.08	1.12	1.16	1.20

The growth in customer numbers shown in **Table 6-2** was queried by Western Water as it expects higher growth rates than indicated above. The effect of higher customer numbers would be to reduce the Variance from Target BAU Opex. The numbers proposed by Western Water and submitted to Price Waterhouse Coopers (who were conducting the growth forecast review for the ESC) were 54,760 (08/09), 56,550 (09/10), 58,360 (10/11), 60,370 (11/12) and 62,550 (12/13). The ESC advised SKM that the numbers proposed by Western Water had been supported by Price Waterhouse Coopers. This issue is discussed and considered further in **Section 6.2.17.**

The total forecast operating expenditure (excluding bulk water charges, licence fees and the environmental contribution) in the second regulatory period substantially exceeds the Target BAU Opex in every year, and exceeds the Target BAU Opex by $20.98M in aggregate. That is the Variance from Target BAU Opex is positive for each year of the regulatory period, and requires explanation.

This indicates that there are real increases in planned operating expenditure above BAU (2006/07 as the base year) after allowance for growth and the stipulated 1% p.a. productivity improvement. Thus prima facie Western Water will not achieve the 1% p.a. productivity target unless all of the new/additional costs planned can be justified as part of the future BAU Opex base. This indicates that (after allowing for growth) further productivity improvements may need to be considered unless this variance is fully justified (e.g. expenditure associated with new obligations, additional obligations on existing activities or with new infrastructure).

The explanations of the variance involved are discussed in the following sections.

6.2 Additional costs relative to the 2006/07 base

Western Water advised the review team of a number of "new" / additional costs that it expects to incur during the regulatory period and that it regards as additional to the normal BAU Opex incurred in 2006/07. As such these costs indicate the extent by which planned productivity improvements exceed 1% per year, after allowing for growth. The additional costs advised by Western Water are shown in **Table 6-3**.

- **Table 6-3: "New" Costs or Explanation of the Variance from Target BAU Opex submitted by Western Water**

Line Item	Description	Forecast Real Expenditure Movement relative to 2006/07 ($ 000 - real Jan 2007)					
		2008/09	2009/10	2010/11	2011/12	2012/13	Total
1	EBA and EFT Increase	1,136	1,506	1,853	2,146	2,410	9,051
2	Water - Additional Power	326	835	1,119	1,710	1,998	5,988
3	Class A Opex	733	761	554	634	712	3,394
4	Depreciation incorrectly calculated in Water Plan	538	538	538	538	538	2,690
5	Computer Maintenance	202	297	404	516	649	2,068
6	Water - Additional Chemicals	120	278	355	531	601	1,885
7	Water Supply Demand Strategy actions	210	210	210	210	210	1,050
8	Biosolids Management Melton	200	200	200	200	200	1,000
9	Additional Rent	182	182	182	182	182	910
10	Waste Water - Additional Power	39	103	146	222	269	779
11	Human Resources Strategy	90	90	90	90	90	450
12	Restriction enforcement	90	90	90	90	90	450
13	Waste Water - Additional Chemicals	20	51	69	99	116	355
14	Additional Legal costs processing objections	60	60	60	60	60	300
15	Implement Hardship Policy	50	50	50	50	50	250
16	Recruiting	50	50	50	50	50	250
17	Greenhouse gases	50	50	50	50	50	250
18	Biosolids	50	50	50	50	50	250
19	Additional for weed & pest control	50	50	50	50	50	250
20	Woodend Desludging	-	-	-	240	-	240
21	Analysis Charges.	46	46	46	46	46	230
22	Romsey Desludging	-	-	220	-	-	220
23	Bacchus Marsh Desludging	-	200	-	-	-	200
24	Depot R&M	9	19	29	40	52	149
25	Recycled Water - Additional power	7	18	26	40	48	139
26	Property Services	110	-	-	-	-	110
27	Sewer Stat Audit 10/11 & 11/12	-	-	50	50	-	100
28	Gisborne Desludging	100	-	-	-	-	100
29	Miscellaneous items	142	131	77	117	102	568
30	**Total**	**4,610**	**5,865**	**6,568**	**8,011**	**8,623**	**33,676**
31	Variance from Target BAU Opex	3,562	4,145	4,088	4,709	4,479	20,984
32	**Difference**	**1,047**	**1,720**	**2,480**	**3,301**	**4,143**	**12,692**

The items in **Table 6-3** have been listed in order of aggregate cost, excepting Line Item 29 "Miscellaneous items" which comprises eleven (11) items put forward by Western Water which were each individually less than $100K in aggregate over the regulatory period.

The sum of the new/additional expenditures associated with the items put forward by Western Water as justifying the Variance from Target BAU Opex. (refer Line Item 30 in **Table 6-3**) is greater than the Variance from Target BAU Opex requiring justification (refer Line Item 31 in **Table 6-3**) for each year of the regulatory period. If fully justified this would provide a satisfactory explanation of and justify the Variance from Target BAU Opex.

The review team's assessment of the items and the associated expenditures put forward by Western Water is provided in the following sections.

6.2.1 EBA and EFT Increase

Table 6-4 presents information from two sources on the real increases in labour costs:

- The first (shown at Line Item 2, **Table 6-4**) is derived from **Table 6-3** which summarises the costs put forward by Western Water in explanation of the Variance from Target BAU Opex.; and
- The second (shown at Line Item 3, **Table 6-4**) is derived from **Table 6-1** which summarises the information provided by Western Water on the breakdown of "costs by driver".

The review team notes that these two sets of costs, purportedly for the same item, differ. The review team has not attempted to reconcile this difference. The review team also notes the gross operating expenditure does not precisely match the gross operating expenditure in **Table 6-2** for a number of years from (and including) 2006/07 to the end of the regulatory period.

Table 6-4 also presents the review's team recommendation as to the movement in the cost of this item which it considers forms part of the explanation of the Variance to Target BAU Opex.

- **Table 6-4: Assessment of EBA and EFT cost increases**

Line Item	Description	Forecast Real Expenditure Movement relative to 2006/07 ($ 000 - real Jan 2007)					
		2008/09	2009/10	2010/11	2011/12	2012/13	Total
	Western Water View of Real labour cost Increases						
1	***[Base labour cost (2006/07) = $7,058K)***						
2	EBA and EFT Increase (from Table 6-3)	1,136	1,506	1,853	2,146	2,410	9,051
3	Salaries and on-cost (from Table 6-1)	1,112	1,485	1,825	2,095	2,320	8,837
	Review team recommendation						
4	EBA increases at 1.25% real	178	269	361	454	548	1,810
5	Number of new positions	6	12	13	13	13	
6	Cost of new positions (at $80K p.a. +1.25% p.a.)	486	984	1,079	1,093	1,107	4,749
7	**Total** [= Justifiable explanation of Variance from Target BAU Opex]	664	1,253	1,440	1,547	1,655	6,559
8	**Adjustment to Labour Costs**	(472)	(253)	(413)	(599)	(755)	(2,492)

Western Water proposes to create up to 13 additional new positions, and these are considered reasonable and prudent by the review team to meet business needs and to build into the regulatory operating expenditure base, increasing as indicated in **Table 6-4**. Many of the new positions are driven by the high rate of growth in the region. The recommended EBA increase is calculated using the actual cost for 2006/07 as a base (estimated to be $7,058K) and 1.25% per annum real increases as discussed in **Section 3.2.3.** [NB: The real labour cost increases year by year indicated by **Table 6-3** are assumed to be the numbers underpinning the Water Plan and the Total Annual Labour cost for 2008/09 underpinning the Water Plan is $8,194K (from **Table 6-1).**

The positions contemplated by Western Water are intended to cover reasonable resourcing needs including in the following areas:

- Depot maintenance needs to service growth, manage aging assets and meet service obligations;
- Biosolids and reuse management
- WTP operational personnel
- Water resources management
- Environmental management
- Other (including SCADA)

The review team recommends that for real labour cost increases ("EBA" and EFT):

- The justifiable Variance from Target BAU Opex in aggregate over the regulatory period be $6,559K (refer Line Item 7, **Table 6-4**)
- The adjustment (reduction) in Western Water's operating expenditure to be made is $2,492K in aggregate over the regulatory period (refer Line Item 8, **Table 6-4**). The amounts for the various years is to be carried forward to the table summarising the overall adjustments to the regulatory operational expenditure forecasts (**Section 6.3**).

6.2.2 Bulk Water Purchases

Although the costs of bulk water purchases do not form part of the calculation of Target BAU Opex and therefore need not be considered in explaining the Variance from Target BAU Opex the ESC requested the review team to form a view as to the reasonableness of the quantum / volume of any forecast bulk water purchases.

In the following discussion the consideration of this issue has been dealt with in terms of the overall strategy for maintaining water supplies and specifically together with the costs put forward under line item 6 in **Table 6-3** and the costs of supplying water from Western Water's local sources.

Western Water provided the review team with a detailed explanation of the forecast growth in demand and the manner in which Western Water proposes to meet these water demands. The review team notes the high population growth rates being experienced in Western Water's regions and the high growth rates expected in water demand that are consequent to this. The review team also notes the especially severe impact that the recent climatic conditions have had on local water resources in Western Water's region and that Western Water has nevertheless prudently managed its water resources to steer a path through this difficult situation.

The explanation put forward by Western Water in further explanation of the Water Supply Demand Forecasts and further to the demand documentation provided in the 2008-2013 Water Plan, Section 6, and supporting Western Water's business position and reasoning behind aspects of the forecasts and the forecast table under Section 6.2 of the Water Plan is contained in **Appendix B** of this report.

The review team's considered response to this submission may be summarised as follows:

- Western Water has developed a reasonable, prudent and robust business strategy that will provide its customers with ongoing water supplies that should be both adequate and reasonably secure and provide an effective and efficient means of managing water resources under the difficult circumstances being experienced currently. Western Water should receive appropriate commendation in developing and implementing a soundly based business strategy with clear, reasonable and prudent business decision-making processes and rules to support its water resource management strategy.
- Currently (25 March 2008) the reservoirs that until fairly recently constituted Western Water's primary and predominant water sources are respectively 3.8% (974 ML) and 13.6% (4,435 ML) full. These reservoirs, Rosslynne Reservoir and Lake Merrimu respectively, are both operated by Southern Rural Water.
- The proposal therefore to make maximum utilisation of the Yarra River entitlement (of 11,250 Ml/year that is supplied through and by Melbourne Water) is prudent and reasonable. This however has a major impact on the cost of the services that will be provided to customers.
- The forecast demands are sufficiently large, (even after allowing for reductions in these attributable to both water restrictions and the planned and ongoing water demand management initiatives) that the Yarra River entitlement of 11,250 ML/year will be insufficient to meet the total demand. In any event Western Water's supply system is such that this is not physically possible as some parts of the system are isolated. The review team understands that the planned distribution between the various supply sources can be illustrated in **Table 6-5.**

- **Table 6-5 Western Water - Proposed Water Supply Sources**

	2008/09	2009/10	2010/11	2011/12	2012/13
Melbourne Water (ML)	11250	11250	11250	11250	11250
Southern Rural Water (ML)	376	1001	1534	2705	3169
Western Water (ML)	999	1529	2000	2000	2000
Total (ML)	12625	13780	14784	15955	16419

- The level of "bounce back" in demand following the reduction in severity of water restrictions is an area of uncertainty. The review team notes that Western Water expects this to occur fairly rapidly and for the additional "local effect" of savings due to water restrictions to diminish effectively to almost zero in only three years. The review team queries whether this would occur as rapidly as this. The general experience seems to be that some reasonable measure of a "permanent" reduction in water savings would remain and that complete "bounc-back" will not occur, let alone so readily as assumed by Western Water. This seems a quite conservative assumption in the context of the large and increasing quantities of water from Melbourne Water (and therefore very significant real cost increases) being assumed for the regulatory period.
- The review team notes that whilst the "Western Water" local sources are the most economical source of water their combined yield is only approximately 950 ML/year (reference #3). Whilst Western Water plans to further develop and extend these supply sources (e.g. through new bores near Romsey) the volumes of withdrawal from local sources indicated in **Table 6-5** may be optimistic and potentially there may be further need to resort to supplies drawn from either the Southern Rural Water or Melbourne Water sources.
- However good rains could potentially reverse this scenario, and lead to a considerable increase in the level of withdrawals especially from the Southern Rural Water dams and increased reliance on local sources. Such a scenario would have a major impact on the costs of operating the water supply system for example by allowing the level of purchases made from Melbourne Water to reduce. The review team acknowledges that this scenario would only be likely to impact the later years of the second regulatory period as even in the event of good rains it would take some time for Rosslynne and Merrimu to fill sufficiently that withdrawals return to "normal".
- Principally the review team, in noting the above, considers that:
  - Western Water has adopted a reasonable and prudent position in terms of managing its water resources overall to meet customer obligations
  - Western Water has however adopted a position which from a regulatory operating expenditure viewpoint is quite conservative and one which would result in potentially unreasonably high expenditures to both purchase bulk water from Melbourne Water and to

treat and operate local water supplies. It would also result in conservatively high estimates of the revenue requirements to cover this expenditure.

- Some reduction in the global expenditure provisions for the combined expenditure of these two items, namely expenditure for bulk water purchases and for treating and operating local water supplies, is necessary, reasonable and appropriate.
- An appropriate reduction in global expenditure could be effected by either reducing the expenditure on bulk water purchases, or by reducing (or eliminating) the expenditure for treating and operating local supplies or a combination of these.

[NB: This is not to say that costs will not be incurred for treating and operating local supplies but that the "pool of revenue" received would be sufficient to manage reasonable and less conservative positions with respect to managing water supply resources and purchases of bulk water from Melbourne Water.]

The review team considered a number of approaches including reducing the cost of local water supplies, reducing the cost of SRW supplies, reducing the cost of bulk water supplies or reducing a combination of these costs. Whilst the decision of which cost to reduce was considered somewhat arbitrary, the review team considered that consistent with Western Water's strategy of allowing local supplies and Southern Rural Water Supplies to recover that these should be reduced back to 2006/07 levels and no allowance for an increase in the costs of these sources would be made.

The review team understands that Western Water has access to further bulk water entitlements from Melbourne Water subject to negotiation and therefore any shortfall associated with a reduction in local supplies could be made up with this source. For regulatory expenditure purchases the review team considers that this scenario is more reasonable.

Furthermore, the recommendation (to reduce the expenditure on local supplies and keep the costs of other supplies constant) was made on the basis that the review team considered that with the ESC's input into the pricing of bulk water supplies it was more than likely the cost of bulk water supplies would not be as expensive as forecast by Western Water. As noted in **Table 6-1** the expenditure/costs of water purchases is forecast to increase by over 4 times over the second regulatory period. Only a small fraction of this is associated with growth and the remainder associated with price or perhaps indirectly and to a much lesser extent with reservoir filling

In summary, the review team recommends that, for regulatory operating expenditure purposes:

- An appropriate, reasonable and prudent level of operating expenditure for both the bulk water purchases and treatment and operation of local water supplies combined, as an indicative target, is approximately 60 to 70% of the combined operating expenditure indicated by Western Water for these two items. This view takes into account all the uncertainties indicated above, some level of conservatism in Western Water's assumptions and that some very

substantial operating expenditure increases proposed which should preferably not be built into the operating expenditure base without further review during the 5 year period.

- To achieve this objective the easiest approach to establish this quantum is to provide for the operating expenditure associated with the approximately 90% of the purchase expenditure of bulk water from Melbourne Water broadly at the volumes indicated by Western Water for the regulatory period (and prices to be determined by the ESC) and reduce the provision for the *additional real increase*s in energy cost and chemical costs associated with treating water from Southern Rural Water and Western Water sources to zero. The actual costs for these latter activities are included in the quantum established using this approach (and in the existing BAU for these items).
- The ESC is best placed to determine the appropriate expenditure amount as it has best knowledge of the appropriate prices to be applied for the determination of the costs of bulk water purchases from Melbourne Water. The review team simply recommends that the volumes proposed by Western Water be adopted for the purposes of determining the prudent level of operating expenditure to be provided.
- The reasonableness of the operating expenditure provided for these two sets of activities (and the revenue sufficiency for them) be reviewed at least twice during the regulatory period, or annually if appropriate, on the principle that if there are material shortfalls (or these are likely to occur in the period) that this would constitute a re-opening event.

Recommendation: Consistent with this approach, the review team recommends that:

- The ESC provide an aggregate expenditure amount to cover both the cost of bulk water purchases and the cost of local supplies at approximately 60% to 70% of the aggregate quantum sought by Western Water;
- As a consequence, the *additional real cost increases* of treating and operating local water supplies has been set at zero in the adjustments table (**Table 6-9**, **Section 6.3**) and these costs are not considered as contributing to the explanation of the Variance from Target BAU Opex.
- Similarly an adjustment (reduction) of 10% of the cost of bulk water purchases in each year of the regulatory period be also be made to achieve the broad objective above (refer adjustment in **Table 6-9**, **Section 6.3).** Similarly this does not contribute to the Variance from target BAU opex.
- The ESC monitor and review the actual expenditure on the bulk water purchases and costs of local supplies and adopt an adjustment mechanism to modify Western Water's revenue to meet materially increased expenditure requirements from that implied above (for example through a re-opening event). A review should occur at least twice during the period.

6.2.3 Additional Power ($6.906M)

Western Water has noted three items in **Table 6-3** for water ($5.988M), wastewater ($779K) and recycled water ($139K) respectively. For convenience all of these items are discussed together following.

Western Water provided information on the actual (2006/07) and forecast electricity consumption during the second regulatory period. This data, showing new demands, is indicated in **Table 6-6** below.

The review team has broadly assessed these new demands and considers them to be reasonable and prudent consistent with new infrastructure being brought into service from 2006/07 and/or during the second regulatory period.

Table 6-6 also allows a comparison between the movement in electricity costs with respect to 2006/07 (line item 2) with the sum of the three "additional power" items put forward by Western Water (and identified in **Table 6-3)** as an explanation of the Variance from Target BAU Opex (line 6, **Table 6-6**). The review team notes that there is a small discrepancy between these costs from the two sources for this information (which should be equal). The review team has not attempted to reconcile this difference.

The review team's recommendations for the costs considered to be part of the explanation of the Variance from Target BAU Opex are also shown in **Table 6-6.** This recommendation is based on:

- The "global" base tariff in 2006/07 (line item 8) and percentage increases for each year of the regulatory period according to the recommendations in **Section 3.2.1** (line item 11);
- The energy consumption forecast by Western Water (line item 7).

In summary, the review team recommends that:

- The amount of the real increases in overall electricity costs considered as a justifiable explanation of the Variance from Target BAU Opex. is $4,560K in aggregate for the regulatory period (refer line item 15, **Table 6-6);** and,
- Various adjustments to the annual regulatory operational expenditure for electricity need to be made with an aggregate reduction over the second regulatory period of ($419K) as indicated in line 16, **Table 6-6.**

■ **Table 6-6: Assessment of Real Increases in Electricity Costs**

Line item	Description		Second Regulatory Period					
		2006/07	2008/09	2009/10	2010/11	2011/12	2012/13	Total
	Western Water view							
1	Electricity (from Table 6-1) ($000)	1,491	1,849	2,363	1,623	3,181	3,418	12,434
2	Electricity movement wrt 2006/07 ($000)		358	872	132	1,690	1,927	4,979
3	Water - additional power ($000)		326	835	1,119	1,710	1,998	5,988
4	Wastewater - additional power ($000)		39	103	146	222	269	779
5	Recycled water - additional power ($000)		7	18	26	40	48	139
6	**Total (line items 3 to 5)**		**372**	**956**	**1,291**	**1,972**	**2,315**	6,906
7	**Actual / Forecast power consumption (MWh)**	14,843	**17,937**	**19,964**	**20,810**	**22,566**	**23,201**	
8	**Average tariff (from line items 1 and 7) ($/kWh)**	0.100	**0.103**	**0.118**	**0.078**	**0.141**	**0.147**	
9	**Tariff increase relative to 2006/07 (%)**		**3%**	**17%**	**-19%**	**52%**	**33%**	
	Review team recommendation							
10	Tariff increase relative to 2006/07 (%)		12%	15%	15%	15%	15%	
11	Average tariff (global view)		0.113	0.116	0.116	0.116	0.116	
12	Cost increase attributable to tariff increase - base demand ($000)		179	224	224	224	224	1,074
13	Cost increase attributable to additional consumption ($000)		348	592	689	892	966	3,487
14	Total cost of electricity ($000) [=2006/07 base + Line 12 + line 13]		2,018	2,306	2,404	2,607	2,680	12,015
15	Total real cost increase considered prudent wrt 2006/07 ($000) [= amount justifying Variance from target BAU opex]		**527**	**815**	**913**	**1,116**	**1,189**	**4,560**
16	Adjustment to Water Plan Opex (transfer to adjustments table) [= Line item 14 - Line Item 1]		**169**	**(57)**	**781**	**(574)**	**(738)**	**(419)**

6.2.4 Class A Opex ($3.394M)

Western Water has included planned additional expenditure of $3.39M in aggregate over the regulatory period on its Eynesbury Class A system assuming that this new plant is commissioned in 2008. In the first two years Earthtech will operate the plant at a cost of $733K p.a. then Western Water will operate the plant at a reduced expense. However, costs will increase as additional connections to Eynesbury and Melton South occur.

For purposes of the Draft Report the review team considered that the planned additional expenditure formed part of the justifiable explanation of Variation from Target BAU Opex. but sought further discussion with, and information from, Western Water on the basis of the cost estimate to better assess the appropriateness and reasonableness of the expenditure quantum.

At the Draft Report stage the review team sought further information on the following:

- a breakdown of the $733K (including the number of new connections in Melton and Eynesbury and what, if any, allowance for power costs have been included in this item);
- why the variance increases from $733K to $761K in the second year if EarthTech is being paid on a fixed fee basis;
- the basis of the decline in operational cost of the plant in year 3 of the second regulatory period if additional connections are expected to increase costs. For Draft Report purposes it was assumed that the costs are higher in the first two years because Earthtech is recovering some of its capital/construction and/or commissioning costs in the effective charges ("toll") to Western Water as well as its operating costs. Consequently when the plant is handed over to Western Water only the operating costs will apply in years three to five of the regulatory period;
- how commissioning costs in the first years of operation are dealt with.

Western Water provided a copy of a part of its contract and a break-down of the costs into fixed and variable portions. The cost provided by Western Water represents a reduction in the amount originally allowed for in its Water Plan. The review team has adopted these revised figures and considers the analysis undertaken sufficiently robust.

The review team notes that together with the revised breakdown of expenditure provided to the review team in response to the Draft Report a different set of costs were quoted for this item as being the costs submitted for the Water Plan. These "alternate" costs are shown in **Table 6-7** together with the costs originally submitted as part of the explanation of the variance and the revised submission that followed the Draft Report.

- **Table 6-7: Costs for Class A Opex**

Description	Forecast Expenditure Movement wrt 2006/07 ($ 000 real Jan 2007)					
	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Class A opex from Table 6-3	733	761	554	634	712	3,394
Alternate	715	724	514	574	629	3,157
Revised submission post Draft Report	653	664	684	555	610	3,166

In summary the review team considers the costs shown in the final line of **Table 6-7** should form part of the explanation of the Variance from Target BAU Opex and that an adjustment (reduction) to the overall Water Plan operational expenditure forecast for regulatory purposes for this item be made commensurate with the difference between the first and third lines of **Table 6-7**. This is consistent with the most recent cost information provided by Western Water.

6.2.5 Depreciation Incorrectly Calculated in the Water Plan

Western Water had put forward "Depreciation Incorrectly Calculated in the Water Plan" as an explanation to Variance from Target BAU Opex. Western Water has acknowledged in further discussion that it is inappropriate to include this item for inclusion as an explanation of the Variance from Target BAU Opex as it is a non-cash item (and operating expenditure includes only cash items).

Western Water advises that this expenditure has been incorrectly included in its templates provided to the ESC and also in the planned operating expenditure information provided to the review team. Western Water intends to advise the ESC that it will remove $540K from the Opex in each year of its Water Plan to adjust for this item.

The review team understands that Western Water has advised the ESC that the amounts incorrectly included in the Water Plan in operating expenditure in real terms in the respective years of the second regulatory period are (aggregate amount of $2,612M):

- 2008/09: $538K,
- 2009/10: $530K
- 2010/11: $522K
- 2011/12: $515K
- 2012/13: $507K.

The review recommends that the ESC follow this issue up with Western Water and then make any necessary adjustments to the operational expenditure forecast. If the foregoing discussion is verified it would be necessary to reduce the Opex by approximately $540K in each year of the second regulatory period.

6.2.6 Computer Maintenance ($2.068M)

Western Water is planning to spend an additional $2.07M in aggregate over the second regulatory period on additional computer maintenance. Western Water provided quantified explanations for $1.978M in aggregate comprising a number of items including:

- business continuity expenditure;
- new PABX;
- workstation and server licences;
- MATE (a mobile computing project for field staff);
- increase in internet licence costs and increase in CARE licence costs;
- rollout of Dataworks throughout the business;
- Web site content management;

- Melbourne Water drainage charge collection;
- Website customer self serve;
- Knowledge management;
- Email and Web spam/physing filtering;
- GIS replacement;
- Asset life.

The review team considers that the expenditure on the new PABX is a justifiable explanation of Variance from Target BAU Opex ($15K p.a.) because it is associated with a new office. The review team supports Western Water's adoption of MATE (and the related expenditure) as a prudent, reasonable and appropriate initiative to improve business performance and efficiency.

However the review team considers that a number of the items listed above fall in the category of BAU Opex and generally within the scope of items discussed in **Section 3.2.5** which deals with the limit of materiality. The review team therefore recommends that a reduction totalling $288K in aggregate over the regulatory period be applied to this item both in terms of the explanation of the Variance from Target BAU Opex and the regulatory operational expenditure forecast.

The review team recommends that the reductions in the respective years should be approximately $2K, $47K, $54K, $66K and $119K. Particular items that were considered to fall within the "limit of materiality" criterion (**Section 3.2.5)** included for example user authentication for remote users, web-site content management, knowledge management, e-mail and web spam/physing filtering.

6.2.7 Water – Additional Chemicals

The review team compared the increased chemical costs provided in **Table 6-1** with the explanations of variance provided by Western Water and found them to be consistent.

The review team notes that the amount of water supplied from local treatment plants is expected to increase by a factor of over 7. The amount of chemical to be purchased is expected to increase by a factor of over 2.5 times based on the information supplied by Western Water. The review team considers that the expected increase in chemical costs is therefore reasonable in broad terms.

However, this item has been considered under **Section 6.2.2** and reduced in accordance with a scenario proposed for management of regulatory operating expenditure at a global level for bulk water purchases and the costs of local supplies which is outlined in that section.

6.2.8 Water Supply Demand Strategy Actions

Western Water plans to spend $210K p.a. during the second regulatory period on implementing Water Supply Demand Strategy Actions. Appendix K of its Water Plan provides its Water Supply

Demand Strategy (WSDS) which was prepared by SKM in February 2007. Page 12 and 13 of this strategy detail a number of actions and associated costs to implement the preferred WSDS. These include a Community Education Program (approximately $90K per annum), permanent low level restrictions on water use (approximately $2K per annum), showerhead retrofit (approximately $200K total), incentives for retrofit of other appliances (approximately $5K per annum) and other various activities. The review team considers that the expenditures detailed in the WSDS which have been presented to and which is supported by DSE are justified, and considers the cost estimates to be reasonable. The review team recommends that the costs put forward by Western Water should form part of the explanation of Variance from Target BAU Opex.

6.2.9 Melton Biosolids Management ($1M)

Over the first regulatory period biosolids were recycled from Western Water's Sunbury and Gisborne Recycled Water Plants and it is understood that Western Water is proposing to extend this scheme to include Melton Waste Water Treatment Plant. Western Water is understood to have a commercial arrangement with Pinegro. Pinegro collects biosolids from Western Water and on-sells it to customers, including preparing and obtaining approval for Environment Improvement Plans. The review team considers that the program is justified and in line with Western Water's statement of obligations. The review team has reviewed the reasonableness of the forecast cost based on the volumes of biosolids involved and unit cost information and considers the cost to be reasonable.

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

6.2.10 Desludging

A number of the Western Water's WWTP's are scheduled for desludging over the period. The Woodend ($240K), Romsey ($220K), Bacchus Marsh ($200K) and Gisborne ($100K) desludging expenditures may be considered significant in total. However, the review team has considered Melton Biosolids Management ($1000K) in more detail and this enables the review team to form a general view about Western Water's biosolids and sludge management practices.

In addition to the planned increases in biosolids management Opex at the Melton Wastewater Treatment Plant, Western Water has indicated planned operating expenditure increases for a range of other biosolids/desludging management under various line items in **Table 6-3:**

- General biosolids management costs - $50K p.a. (and $250K in aggregate);
- Gisborne TP desludging - $100K in 2008/09;
- Bacchus Marsh TP desludging - $200K in 2009/10;
- Romsey TP desludging - $220K in 2010/11;
- Woodend TP desludging - $240K in 2011/12.

Western Water's total increased operating expenditure on biosolids management is $2010K in aggregate across the regulatory period, including Melton Biosolids Management ($1000K, refer **Section 6.2.9**).

In its Draft Report the review team noted that it had not sighted a comprehensive biosolids/desludging management program and sufficient appropriate supporting information (including quantities, information on the extent to which the lagoons are full, decision criteria, timing, how this fits with Western Water's historical biosolids management program and how the annual desludgings proposed at the various sites fit into a long term biosolids/desludging management program with an outlook beyond the second regulatory period).

Western Water provided further information to the review team and confirmed that the Biosolids management costs of $50K p.a related specifically to the transport of Biosolids from its Melton plant. The further information provided by Western Water was predominantly of a descriptive and qualitative nature with the quantitative information predominantly not in a form to properly check all the unit cost information. A comprehensive and integrated strategy was not sighted.

However overall and based on general operational experience, the review team considers that the bulk of this expenditure is reasonable and prudent and is justifiable as explaining the Variance from BAU Opex considering:

- the further descriptive information of the expenditure provided by Western Water.
- the further discussions with Western Water and that these desludging operations are new (associated with delivery of a program developed and implemented since 2006/07);
- its view that in broad terms, the costs seem consistent and reasonable with the costs of other similar desludging operations with which the review team has experience;
- The approach proposed of annual desludging at the various plants (linked with sludge dewatering/drying operations) and staggering these over the regulatory period is appropriate and reasonable.

The review team does not recommend any change to the quantum or timing of this expenditure.

6.2.11 Additional Rent

Western Water advises that it moved offices to Sunbury in April 2007 and that costs incurred in the 2006/07 financial year only included rent from the period April 2007 to June 2007 inclusive. It is understood that the additional rent associated with the new building is $242K per year or $182K for 9 months. The review team considers that additional cost of rent is a justifiable explanation of Variance from Target BAU Opex and considers the cost estimate reasonable given the review team's general understanding of the size and location of the building that is being rented.

6.2.12 Waste Water – Additional Power

Western Water is forecasting an increase in the energy cost of treating waste water as a result of increased flows. Increases in costs associated with power are discussed in **Section 6.2.3.**

6.2.13 Human Resources Strategy ($450K) and Recruiting ($250K)

Western Water proposed to spend an additional $90K per annum on a Human Resources Strategy and $50K per annum on recruiting. The expenditure for the former allows for a traineeship and graduate recruitment program ($75K p.a.) and an employee recognition and well being program ($15K p.a.). The review team considers that both of these elements are an integral part of a human resource strategy for a water authority. The review team considered whether such elements or equivalent elements of a human resources strategy would have been in place in 2006/07. The review team also considered the materiality of the expenditure in the context of other items being discussed, human resource strategies being considered by other authorities and the need for water authorities to recruit additional staff in a very competitive market.

The cost for recruiting relates to expenditure associated with recruitment of new staff discussed in **Section 6.2.1**. These costs are considered to have been included in the allowance recommended under **Section 6.2.1** and to form part of BAU Opex.

On balance the review team considers that the expenditure of $100K p.a. to be appropriate and reasonable expenditure in aggregate for these items as real increases outside BAU Opex (2006/07) and therefore is justified and reasonable in forming part of the explanation of the Variance from Target BAU Opex.

The ESC should review whether this amount is appropriate for inclusion long term in the reset regulatory Opex base.

6.2.14 Restriction Enforcement

Western Water proposes to spend an additional $90K per annum on casual staff to backfill its call centre, as call centre staff are currently involved in the enforcement of water restrictions. The $90K is likely to equate to the equivalent of 1 to 1.5 full time equivalents positions and the need to enforce restrictions has increased since the 2006/07 financial year. The review team considered that the expenditure was justified on this basis and that the cost estimate was reasonable. The review team has confirmed that this additional casual staffs is not included under the discussion of additional labour resources in **Section 6.2.1**. However it should be assumed that this is passed out in year 4 of the regulatory period.

The review team recommends that planned expenditure be accepted as an explanation for Variance from Target BAU Opex for the first three years of the regulatory period only.

6.2.15 Waste Water – Additional Chemicals

Western Water is forecasting an increase in the cost of treating waste water as a result of increased flows attributable to growth and the lifting of water restrictions. The review team considers that the quantum of costs indicated is reasonable and that these costs do form part of the explanation of the Variance from Target BAU Opex.

6.2.16 Miscellaneous Items

Of the remainder of the items put forward by Western Water, the review team notes that all the activities proposed are reasonable from a business viewpoint. In assessing the expenditure on them however the review team has essentially taken a broad view of what is both "material" (considering the description in **Section 3.2.5** regarding the "limit of materiality" – not material and/or in the "swings and roundabouts" year on year activities and/or in BAU opex and/or comprehended by the adjustment for growth in setting the Target BAU Opex) and what is a reasonable and prudent amount in aggregate for these items as an amount for explaining the Variance from Target BAU Opex and for inclusion in the reset regulatory Opex base. These miscellaneous expenditure items have not been assessed in detail by the review team.

On the basis of the above, the items which the review team considers should be within the acceptable quantum (with aggregate cost over regulatory period shown in brackets) are:

- Greenhouse Gases: relates to requirements under its Statement of Obligations in relation to sustainability ($250K)
- Additional Legal Costs Processing Objections ($300K) relate to changing restriction levels. [NB: Reduced to zero in years 4 and 5 on the basis that this will diminish and/or return to BAU levels.]
- Implementation of a new Hardship Policy ($250K) is required because of the increasing price of water.
- Additional Weed & Pest Control ($250K) relates to biodiversity clauses in its Statement of Obligations.
- Analysis Charges ($230K) relates to increased water quality sampling required under ADWG and required at its Class A treatment plant.
- Property Services ($110K) relates to auditing, monitoring and training in relation to on property class A water scheme requirements in 2008/09 only.
- Sewer Stat Audit ($100K) relates to a one off 1 in 5 year Sewer Pump station Audit as required by the EPA.
- Ecological risk assessment 2008/09 & 2009/10 – ($60K).

On the basis of the first paragraph in this sub-section the items which the review team considers should not be within the acceptable quantum (with aggregate cost over regulatory period shown in brackets) are:

- Depot R&M ($150K) relates to an additional year on year allowance of $10K to cover the cost of additional water main breaks during a prolonged dry period.
- Specialist Market Research – involves one off research into the perception of water quality in its area ($40K)
- Additional vehicles at Depots – ($85K);
- IT Strategy – ($70K);
- Uniforms – ($65K);
- Dam Safety Vandalism – ($60K);
- Training – ($60K);
- Credit Rating – ($50K);
- L&B Revaluation – ($40K);;
- Cleaning Asbestos Bins – ($30K);
- Subscriptions – ($8K).

[Note; The review team notes that some of these items are not new obligations, but did not incur expenditure in the base year (2006/07). The review team took this into account and weighed up against the 'swings and roundabouts" issue.]

6.2.17 Summary

The review team's final view of items contributing to the justifiable explanation of the Variance from Target BAU Opex is summarised in **Table 6-8**.

Table 6-8: Review Teams assessment of "New" Costs or Explanation of the Variance from Target BAU Opex

Line Item	Description	Forecast Expenditure Movement wrt 2006/07 ($ ' 000 - real Jan 2007)					
		2008/09	2009/10	2010/11	2011/12	2012/13	Total
1	Water - Additional Power	527	815	913	1,116	1,189	4,560
2	Wastewater - Additional Power	-	Provided for in Line Item 1			-	-
3	Recycled Water - Additional Power	-	Provided for in Line Item 1			-	-
4	EBA and EFT Increase	664	1,253	1,440	1,547	1,655	6,559
5	Class A Opex	653	664	684	505	560	3,066
6	Greenhouse gases	50	50	50	50	50	250
7	Computer Related Activities	200	250	350	450	530	1,780
8	Water - Additional Chemicals	-	-	-	-	-	-
9	Water Supply Demand Strategy actions	210	210	210	210	210	1,050
10	Biosolids Management Melton	200	200	200	200	200	1,000
11	Additional Rent	182	182	182	182	182	910
12	Human Resources Strategy Initiatives	100	100	100	100	100	500
13	Recruiting	-	Provided for in Line Item 12			-	-
14	Restriction enforcement	90	90	90	-	-	270
15	Waste Water - Additional Chemicals	20	51	69	99	116	355
16	Additional Legal costs processing objections	60	60	60	-	-	180
17	Implement Hardship Policy	50	50	50	50	50	250
18	Biosolids	50	50	50	50	50	250
19	Additional for weed & pest control	50	50	50	50	50	250
20	Woodend Desludging	-	-	-	240	-	240
21	Analysis Charges.	46	46	46	46	46	230
22	Romsey Desludging	-	-	220	-	-	220
23	Bacchus Marsh Desludging	-	200	-	-	-	200
24	Depot R&M	-	-	-	-	-	-
25	Property Services	110	-	-	-	-	110
26	Sewer Stat Audit 10/11 & 11/12	-	-	50	50	-	100
27	Gisborne Desludging	100	-	-	-	-	100
28	Miscellaneous items	60	60	-	-	-	120
	Total	**3,422**	**4,381**	**4,814**	**4,945**	**4,988**	**22,550**
	Variance from Target BAU Opex	3,562	4,145	4,088	4,709	4,479	20,984
	Difference	**(140)**	**236**	**726**	**236**	**509**	**1,566**

As shown in the final row of **Table 6-8**, the review team considers that the increase in operating expenditure that is justifiable as contributing to the Variance from Target BAU Opex exceeds the Variance from Target BAU Opex in each year of the second regulatory period except the first year (shortfall of ($140K). In aggregate over the period the review team considers the Variance from Target BAU Opex to be fully explained. This indicates that (after allowing for growth) productivity improvements exceeding 1% per annum relative to the 2006/07 base year are expected.

Furthermore, the review team notes that if the higher growth numbers proposed by Western Water and agreed to by Price Waterhouse Coopers are used as discussed in **Section 6-1** then the Variance from Target BAU Opex further reduces by approximately $300K in each and every year of the second regulatory period. This confirms that (after allowing for growth) productivity improvements exceeding 1% p.a. relative to the 2006/07 base year are expected in each and every year of the second regulatory period (including the first year).

Therefore the review team recommends no specific productivity adjustment needs to be included in **Table 6-9**.

6.3 Recommendations

The review team's recommendations on the adjustments to Western Water's operational expenditure forecasts for regulatory purposes are that:

- The allowance for bulk water purchases may reasonably allow for purchases of 11,250 ML/year from Melbourne Water which is the maximum limit of Western Water's Yarra River entitlement;
- The provision for increased electricity costs be reduced in accordance with the discussion in **Sections 6.2.2** and **6.2.3;**
- The provision for Labour / EBA and EFT increases be reduced as discussed in **Section 6.2.1**
- The overall costs for the provision of water (bulk water purchases and costs of local water supplies) be reduced as discussed in **Section 6.2.2. It should be noted that the recommended reductions are aimed at providing a substantial but reasonable, prudent and appropriate expenditure sum at this point for building into the reset regulatory Opex base, supported by review(s) by the ESC to establish whether larger expenditure has actually and reasonably been incurred and, if so, for the ESC to manage this through an adjustment mechanism during the regulatory period (through a re-opening event).**

Table 6-2 and the discussion presented in **Section 6.2** shows that Western Water expects to achieve productivity improvements in excess of 1% per annum, after adjustment for growth. On account of

this the review team recommends that no further adjustments be made to the forecast operating expenditure as the additional costs associated with "new" activities fully account for the Variance from Target BAU Opex.

Table 6-9 summarises the review team's recommendations on the adjustments to Western Water's Water Plan Operating Expenditure forecasts for the five year regulatory period.

Table 6-9: Recommended adjustments to Western Water's Operational Expenditure for Regulatory Purposes

Change Item	Item/Description	Forecast	$M				
			2008-09	2009-10	2010-11	2011-12	2012-13
1	Bulk Water Purchases (10% adjustment) **[Approach and/or Adjustments for this item to be determined by ESC]**	Original Water Plan:	0.214	0.457	0.787	1.232	1.833
		Recommended Revised:	0.000	0.000	0.000	0.000	0.000
		Recommended Net Change:	-0.214	-0.457	-0.787	-1.232	-1.833
2	Energy Cost Increases (based on Table 6-1) [NB: only real increases above 2006/07 electricity cost base]	Original Water Plan:	0.358	0.872	0.132	1.690	1.927
		Recommended Revised:	0.527	0.815	0.913	1.116	1.189
		Recommended Net Change:	0.169	-0.057	0.781	-0.574	-0.738
3	Labour - EBA and EFT Increase/adjustment	Original Water Plan:	8.19	8.57	8.91	9.18	9.40
		Recommended Revised:	7.75	8.34	8.52	8.63	8.74
		Recommended Net Change:	-0.45	-0.23	-0.38	-0.55	-0.67
4	Energy cost associated with treating water from SRW and WW sources	Original Water Plan:	0.293	0.468	0.533	0.665	0.710
		Recommended Revised:	0.000	0.000	0.000	0.000	0.000
		Recommended Net Change:	-0.293	-0.468	-0.533	-0.665	-0.710
5	Class A Opex	Original Water Plan:	0.733	0.761	0.554	0.634	0.712
		Recommended Revised:	0.653	0.664	0.684	0.555	0.610
		Recommended Net Change:	-0.079	-0.097	0.130	-0.079	-0.103
6	Computer Maintenance	Original Water Plan:	0.202	0.297	0.404	0.516	0.649
		Recommended Revised:	0.200	0.250	0.350	0.450	0.530
		Recommended Net Change:	-0.002	-0.047	-0.054	-0.066	-0.119
7	Increases in Water - Additional Chemicals	Original Water Plan:	0.120	0.278	0.355	0.531	0.601
		Recommended Revised:	0.000	0.000	0.000	0.000	0.000
		Recommended Net Change:	-0.120	-0.278	-0.355	-0.531	-0.601
8	Productivity Adjustment	Original Water Plan:					
		Recommended Revised:					
		Recommended Net Change:					
9	Depreciation (incorrectly calculated in Water Plan) **[Approach and/or Adjustments for this item to be determined by ESC]**	Original Water Plan:					
		Recommended Revised:					
		Recommended Net Change:					
		Total Net Recommended Changes	$ (0.99)	$ (1.64)	$ (1.20)	$ (3.70)	$ (4.77)
		Original Water Plan Total Regulatory Opex:	$ 32.99	$ 36.44	$ 40.10	$ 45.70	$ 52.02
		Recommended Revised Total Regulatory Opex:	**$ 32.00**	**$ 34.80**	**$ 38.90**	**$ 42.01**	**$ 47.25**

NOTES: The following notes need to be read in conjunction with the above table:

- Further to the discussion in **Section 6.2.5,** the review team understands that Western Water has advised the ESC that the amounts incorrectly included in the Water Plan in operating expenditure in real terms in the respective years of the second regulatory period are (aggregate amount of $2,612M):
  - 2008/09: $538K,
  - 2009/10: $530K
  - 2010/11: $522K
  - 2011/12: $515K
  - 2012/13: $507K.

  The review recommends that the ESC follow this issue up with Western Water and then make any necessary adjustments to the operational expenditure forecast. If the foregoing discussion is verified it would be necessary to reduce the Opex by approximately $540K in each year of the second regulatory period.
- **The first line of the above table has reduced the increase in bulk water costs by approximately 10% in each year of the second regulatory. For regulatory expenditure purchases the review team considers this the minimum likely reduction. The review team recommends that the actual costs incurred for bulk water purchases and etc be subject to review after three years and potentially constitute a "reopening event"**

References

1) Beca, 2005, Upgrade Strategy for the Bacchus Marsh Waste Water Purifcation Plant, may 2005.
2) Water Services Association of Australia, 2007, National Performance Report, 2005-06: Major Urban Water Utilities.
3) Western Water, 2007a, *Water Supply Demand Strategy 2006 to 2055,* February 2007.
4) Western Water, 2007b, *Water Plan 2008-13*.
5) Western Water, 2007c, Woodend Recycled Water Plant Upgrade Investment Evaluation Report.
6) Western Water, 2006, Melton Sewerage Upgrade Investment Evaluation Report, June 2006.
7) MWH, 2006, *Surbiton Park WWP Upgrade Functional Design – Final Report*, September 2006.

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.

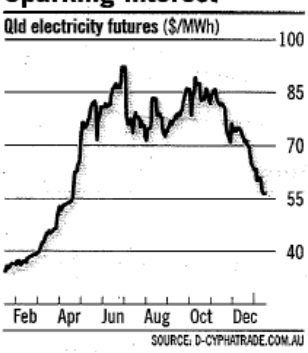
Origin and AGL are both working to increase the proportion of their electricity sales that they generate themselves. Origin is spending $1.3 billion to build a 630 megawatt power station near Dalby, fuelled by gas from its coal-seam methane fields.

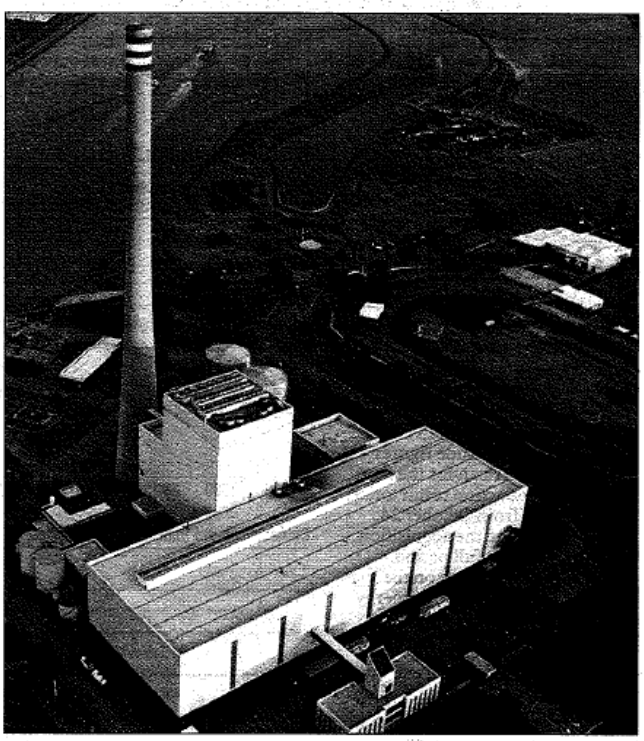
And AGL has locked in electricity supply from a power plant that Queensland Gas is building on its coal-seam methane fields.

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

Appendix B Supporting Information to Water Supply Management Measures Planned by Western Water

(This information was provided by Western Water)

Water Supply Demand Forecasts

Further to the demand documentation provided in the 2008-2013 Water Plan, section 6, the following is to outline Western Water's business position and reasoning behind aspects of the forecasts and the forecast table under 6.2.

The drivers behind this forecasting are:

1) Population growth rate
2) Supply availability (yield)
3) Usage (l/c/d)
4) Demand management savings
5) Restriction level forecast and impacts
6) Business position on Water supply security in this extreme drought

1) Population growth rate

- The population growth rate used is based on DSE's VIF data revised by UDP projections. Western Water's towns situated near Melbourne provide cost effective housing options to people wanting to retain everyday links with the CBD. This is forecast to support government predictions in driving ongoing high growth rates in our region.

2) Water supply availability

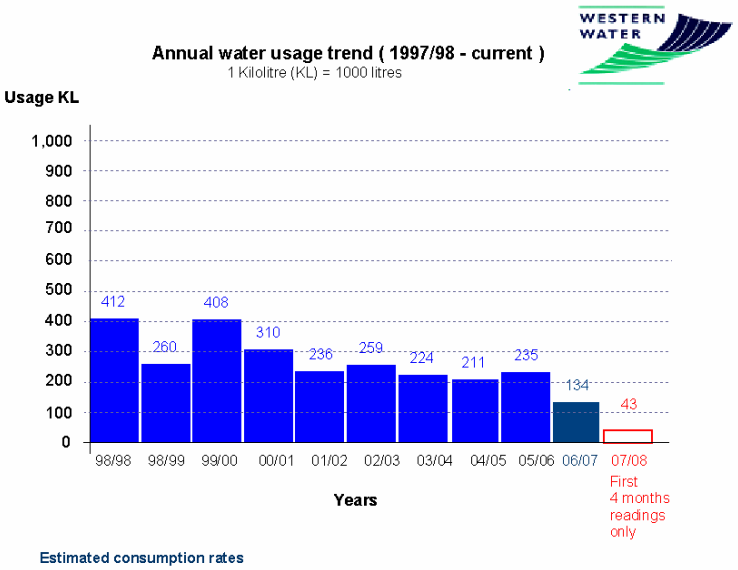
- The key storages in Western Water's area, providing local water supply will be managed to ensure that this least cost water is used as available, without increasing risk to security of supply to by drawing it down to unacceptable levels. The charts attached below provide the range in which Western Water is expecting to operate its key local supply system sources to achieve this.
- At the start of the Water Planning period we find the key storages of Rosslynne and Merrimu at levels below desirable safe limits. This situation is a key driver that makes Western Water look to the planning period with a conservative view, and to ensure adequate time is allowed for recovery of these storages which have performed poorly during the last 10 years of drought. In the Water Plan, Rosslynne and Merrimu are to be called on to supply and increasing amount between 1000ML and 3000ML which will allow recovery of the storage based on inflows tending toward the post 1997 average yield line. The post 1997 annual yield prediction takes into account climate change that has become increasingly evident across Australia.
- Western Water's several local smaller storages have consistently performed adequately as long as restrictions have been applied in line with the DRP. The 2006/07 year was so severe across the state that even Western Water's smaller annual storages did not fill. Nevertheless, the Water Plan forecasts that these annual storages will continue to provide local water supply as needed, with only little assistance from external sources via interconnection infrastructure that has been built in the recent past. The bore water supplies in Lancefield are predicted to provide good security as they have in the past, and

WSDS actions to secure additional local water through new bores north of Romsey and water trading in Pykes Creek Reservoir will add to this resource. Local supplies are forecast over the planning period to supply up to 2000ML per year maximum.

- Despite the above, Western Water must allow for the possibility of a continuing 5 years of drought during the planning period, which, if it does occur, will create the need for water to be imported from external sources. To ensure this capability, or contingency plan, is in place, Western Water has, through its WSDS and the CRSWS, and also working closely with CRSWS participants, and the Melbourne Bulk Entitlement Management Committee, confirmed the ability to purchase external water if needed under extreme conditions. This water, shown as a fainter line item in the demand table below, is considered a buffer against not only shortfall in supply side resources, but also as a safety net should demand management efforts fall short of requirements. Such a buffer is in line with WSDS principles and a risk management approach.
- Western Water has, since its connection to Melbourne in 2000, enjoyed the ability to provide water supply from multiple sources. In this light, our WSDS supports planning that maximises flexibility of infrastructure design and promote hydraulic interconnection of the various town supply systems in our region. This benefit is also had in Melbourne and is being enhanced through the Desalination and Sugarloaf pipeline projects, which play an important role in Western Water's supply strategy and 2008-2013 Water Plan pricing submission.

3 & 4) Usage and demand management

- Demand management for Western Water includes a suite of actions, all of which are required to deliver the conservation savings to meet the CRSWS and WSDS targets or 25% reduction by 2015 and 30% reduction by 2020.
- To date, with restrictions, Western Water customers are demonstrating a significant drought awareness and conservation conscious approach to their usage. Consumption has reduced by 45% since the 1990's on average, and behaviour is changing. Western Water's Demand Management Strategy includes total water production savings which are included in the demand forecast tabulation below. These include as main players, PWSR, behaviour change, education programs, UFW reduction, Rain water tanks and Dual pipe systems, Pricing and water fixture management via exchange programs (eg: shower heads) and code controls to both existing and new developments. This chart is



an example of 10 year usage trend that now available for every customer at Western Water. This product provides information to customers to see how they are doing and is based on the premise that "knowledge is the greatest motivator for behaviour change". This chart is a good example, the opposite is also readily available, and will be used to win the conservation battle in the homes of individual customers.

5) Restriction forecast and impacts

- 86% of consumption at Western Water over the last year has been supplied from its Yarra BE, and therefore as contractually required under our BE, Western Water has applied the same level of restriction to its customers as exists in Melbourne. Given this is the case, in forming the Water Plan demand forecasts Western Water has worked closely with the Metropolitan retailers, and the forecast restriction levels of 3, 2, 2, 1 and then PWSR over 5 years, although arguably optimistic given the last 10 years of drought, are based on the same assumptions as are being used for Melbourne, and are the same level of restriction forecast by the city retailers.
- Western Water has experienced restrictions for more of the past 10 years than Melbourne, and working with the Drought Response Committee, has had key input into the determination of the impact of various levels of restrictions, including participating in the technical working group for establishing the new coordinated restrictions rules for Victoria. Again, the % savings at each level of restriction are the same as used for Melbourne, and are based on wide experience with monitoring impacts which was called on by the technical working group. (A copy of this work is available if required) For the planning period the savings predicted due to restrictions are 9.5%, 5.5%, 5.5%, 0% and 0%.
- Further to this restriction saving, Western Water has identified a "local effect" which is attributable to its customers living more on the city / country fringe, and therefore being very drought aware as mentioned. For the water plan this factor has been included in the savings forecast, but is phased out over the 5 year forecast period as the conservation behaviour voluntarily demonstrated at present, becomes normal behaviour "changed" due to the demand management programs that will be implemented.

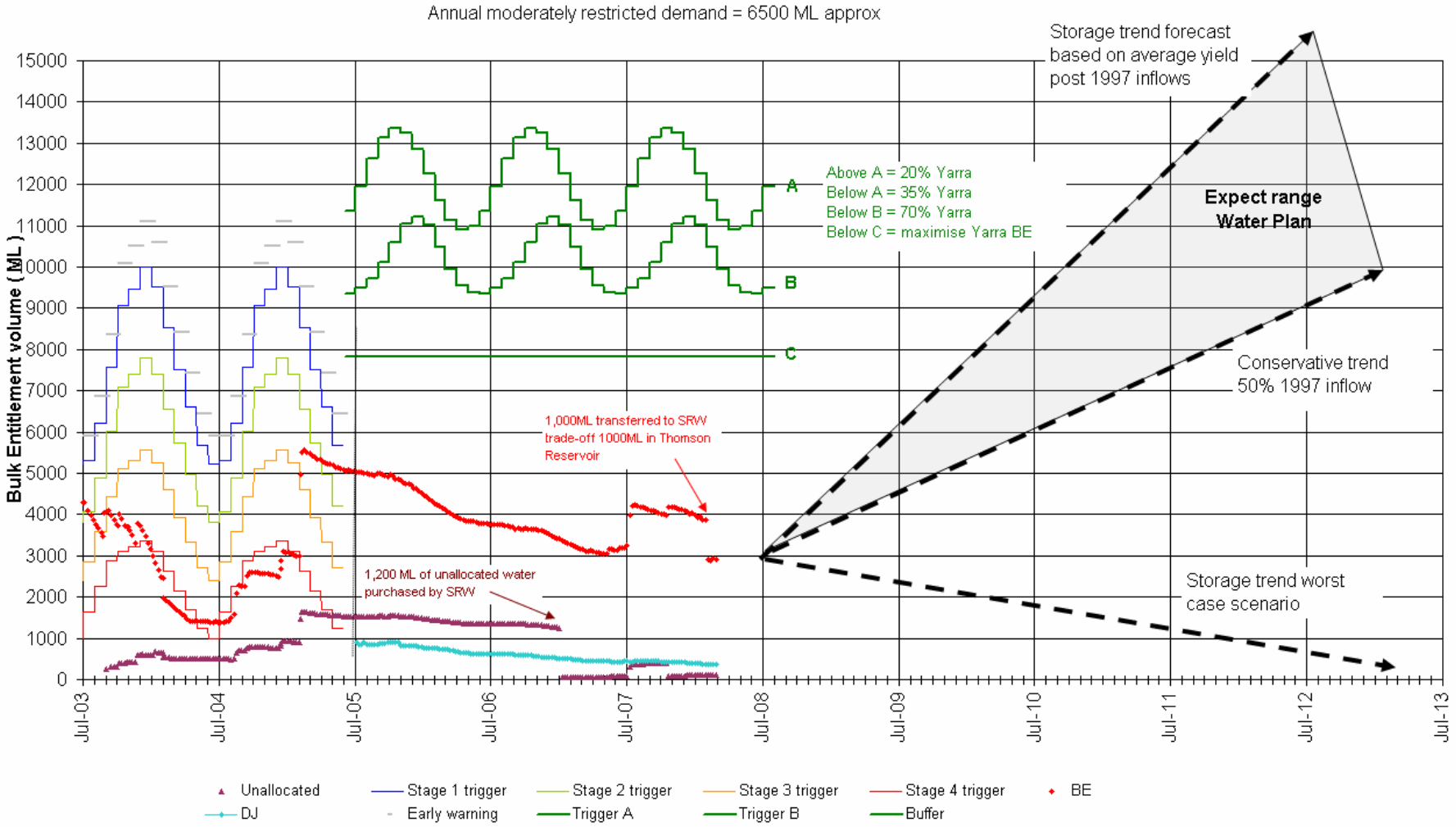
6) Business position on water supply security

- Western Water's experience has been driven by the need to provide water supply security for its rapidly growing customer base. Participation in the CRSWS and WSDS processes has been excellent, and has focussed capital planning in these critical areas. Resources required to meet such demands within an increasingly regulated environment must be carefully and cost effectively managed, and a risk based approach is essential. This is the position Western Water's Board has found itself in over the last 10 years. Not mentioned specifically in the above points is the over-riding impact on weather and climate on our business. Western Water's 2008-2013 Water Plan forecast is a conservation but optimistic one, with ability to deliver continuous improvement in KPI's, to influence its customers with conservation programs, expand infrastructure to meet growth, and importantly to provide contingency options for unforeseen external possibilities.

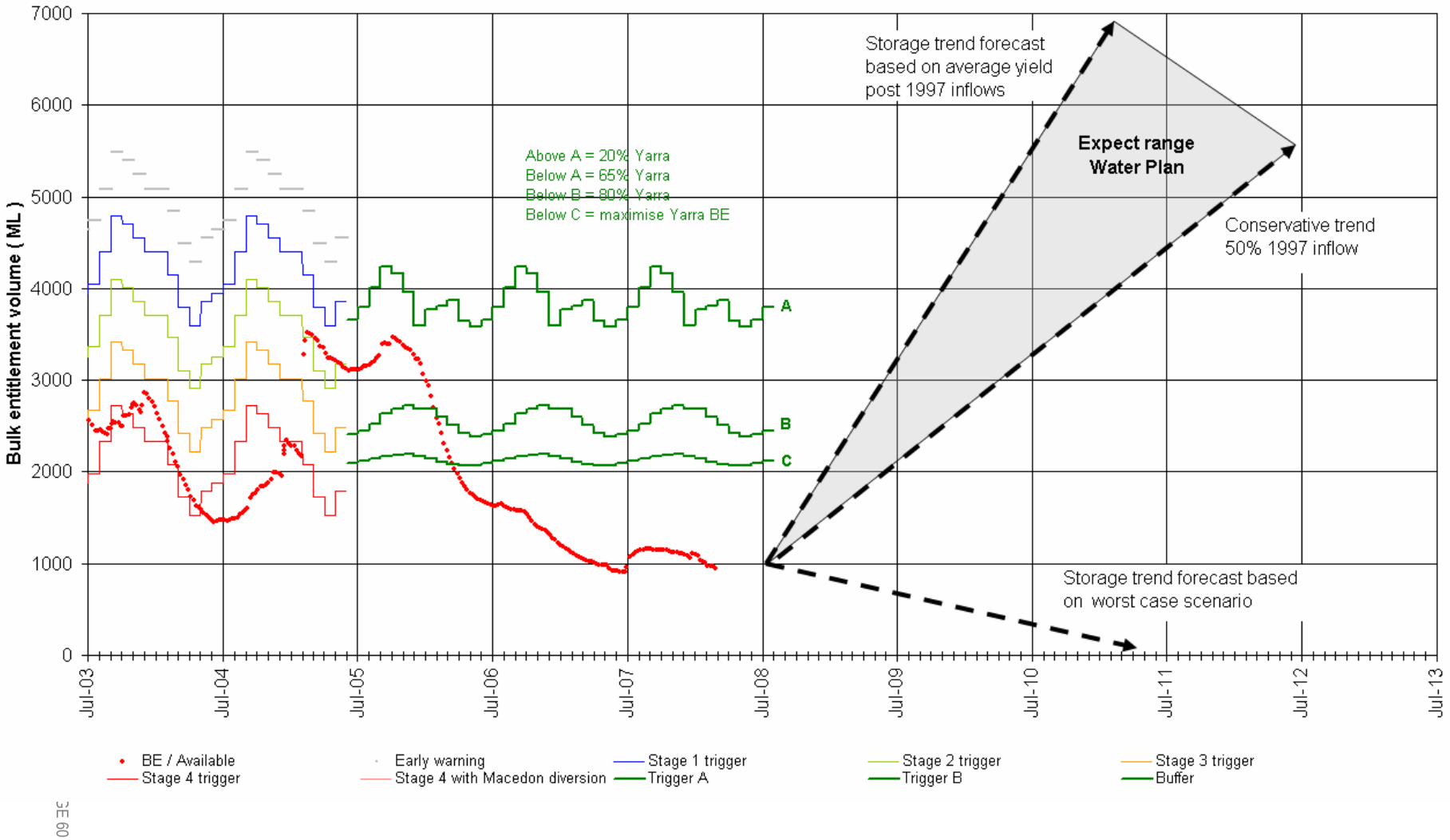
WATER PLAN DEMAND FORECAST INCLUDING DEMAND MANAGEMENT & RESTRICTIONS

	Historical period (actual)				Approved	Forecast period				
			1	2	3	1	2	3	4	5
	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Growth rate (VIF revised by UDP)			2.95%	3.18%	3.11%	3.32%	3.24%	3.18%	3.66%	3.55%
Populations serviced	119,775	123,600	127,246	131,293	135,376	139,870	144,402	148,994	154,447	159,930
Unrestricted demand (total ML)		15,429	15,884	16,389	16,899	17,460	18,026	18,599	19,280	19,964
Targeted savings for Demand Mgt program		0	1075	1325	1688	2074	2451	2787	3163	3545
Usage after demand mgt savings		15,429	14,809	15,064	15,211	15,386	15,575	15,812	16,117	16,419
Likely/planned restrictions level (1 2 3 or 4)		2	PWSR	3	3a	3	2	2	1	PWSR
Expected "average" % reduction due to restrictions		5.5	0	9.5	10	9.5	5.5	5.5	0	0
Additional "local effect" % reduction		17.935	12.95	13.49	7	5	3	1	1	0
Actual usage after restrictions & demand mgt savings		11,813	12,891	11,601	12,625	13,155	14,251	14,784	15,955	16,419
Actual & forecast demand (Total ML)	11,351	11,813	12,891	11,601	**12,625**	**13,155**	**14,251**	**14,784**	**15,955**	**16,419**
… sourced from Yarra BE					11,250	11,250	11,250	11,250	11,250	11,250
… extra supply / contingency from Melbourne to meet growth / drought-climate change as needed (see CRSWS table 4.12 & WSDS)						5,000	5,000	5,000	5,000	7,000
… sourced from SRW (Rosslynne, Merrimu, Pykes) as available					376	376	1,001	1,534	2,705	3,169
… sourced from local storages (Max = 2000ML approx) as available					999	1,529	2,000	2,000	2,000	2,000
L/c/d forecast		262	278	242	256	258	270	272	283	281
1990's equivalent average demand		16,918	17,417	17,971	18,530	19,145	19,765	20,394	21,140	21,890
% reduction from 1990's average l/c/day		30%	26%	35%	32%	31%	28%	28%	25%	25%

Lake Merrimu (Melton, Bacchus Marsh, Rockbank, Toolern Vale)



Rosslynne Reservoir (Gisborne, Macedon, Riddells Ck)



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