Draft Report

SEQ Price Monitoring for 2012-13

Part B - Detailed Assessment

January 2013

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The Authority wishes to acknowledge the contribution of the following staff to this report

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SUBMISSIONS

This report is a draft only and is subject to revision. Public involvement is an important element of the decision-making processes of the Queensland Competition Authority (the Authority). Therefore submissions are invited from interested parties. The Authority will take account of all submissions received.

Written submissions should be sent to the address below. While the Authority does not necessarily require submissions in any particular format, it would be appreciated if two printed copies are provided together with an electronic version on disk (Microsoft Word format) or by e-mail. Submissions, comments or inquiries regarding this paper should be directed to:

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The **closing date** for submissions is **28 February 2013**.

Confidentiality

In the interests of transparency and to promote informed discussion, the Authority would prefer submissions to be made publicly available wherever this is reasonable. However, if a person making a submission does not want that submission to be public, that person should claim confidentiality in respect of the document (or any part of the document). Claims for confidentiality should be clearly noted on the front page of the submission and the relevant sections of the submission should be marked as confidential, so that the remainder of the document can be made publicly available. It would also be appreciated if two copies of each version of these submissions (i.e. the complete version and another excising confidential information) could be provided. Again, it would be appreciated if each version could be provided on disk. Where it is unclear why a submission has been marked "confidential", the status of the submission will be discussed with the person making the submission.

While the Authority will endeavour to identify and protect material claimed as confidential as well as exempt information and information disclosure of which would be contrary to the public interest (within the meaning of the *Right to Information Act 2009 (RTI)*), it cannot guarantee that submissions will not be made publicly available. As stated in s187 of the *Queensland Competition Authority Act 1997* (the QCA Act), the Authority must take all reasonable steps to ensure the information is not disclosed without the person's consent, provided the Authority is satisfied that the person's belief is justified and that the disclosure of the information would not be in the public interest. Notwithstanding this, there is a possibility that the Authority may be required to reveal confidential information as a result of a RTI request.

Public access to submissions

Subject to any confidentiality constraints, submissions will be available for public inspection at the Brisbane office of the Authority, or on its website at www.qca.org.au. If you experience any difficulty gaining access to documents please contact the office (07) 3222 0555.

Information about the role and current activities of the Authority, including copies of reports, papers and submissions can also be found on the Authority's website.

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1. QUEENSLAND URBAN UTILITIES

1.1 Introduction

This is the third year of price monitoring of retail/distribution water and wastewater prices in South East Queensland (SEQ) by the Authority.

1.2 Ministerial Direction

Under the Ministerial Direction (**Appendix A**), the Authority must for Queensland Urban Utilities (QUU) and Unitywater (the entities):

(a) monitor the annual change in prices of distribution and retail water and wastewater services for households and small business customers having regard to the consumer price index (CPI) price limit (price cap) as described in relevant legislation; and

(b) monitor the annual change in prices for water and wastewater services not included in the CPI price limit (non-capped services), having regard to the change in revenue from these services compared to the change in the total prudent and efficient costs of carrying on the relevant activity.

The Authority must also:

(a) provide timely and transparent information to customers about the costs and other factors underlying the provision of water and wastewater services, including distinguishing the bulk and distribution/retail costs to the extent that it is possible given the availability and reliability of relevant information; and

(b) monitor the entities' revenue from water and wastewater activities against their total prudent and efficient capital and operating costs (the maximum allowable revenue or MAR).

1.3 Background

QUU provides water and wastewater services to 1.3 million people in the Brisbane, Ipswich, Somerset, Scenic Rim and Lockyer Valley local government areas. Key characteristics of QUU's service and asset base appear in Table 1.1 below. Changes from QUU's previous submissions reflect updated population and connections and aggregated network data.

Table 1.1: QUU Service and Asset Base

	Brisbane	*Ipswich*	*Somerset*	*Scenic Rim*	*Lockyer Valley*	*Total*
Population[1]	1,081,633	174,558	37,247	38,719	22,272	1,354,429
Residential Water Connections[2]	393,432	61,355	4,934	5,755	9,765	474,903
Non-Residential Water Connections[2]	29,961	1,950	648	1,341	536	34,436
Water reservoirs	na	na	na	na	na	122
Water supply network (km)	na	na	na	na	na	8,800
Wastewater network (km)	na	na	na	na	na	9,000
Wastewater treatment plants	9	4	5	6	4	28

Note: [1] Office of Economic and Statistical Research (OESR) 2011 Low Series Population Forecast. [2] QUU estimated actual connections for 2011-12 sourced from QUU's 2012-13 Information Return. Changes reflect updated data. Source: QUU (2012).

A map of the area serviced by QUU is shown in Figure 1.1 below.

Figure 1.1: Area serviced by QUU

1.4 Prices and Revenues

1.4.1 Prices for Households and Small Businesses

Capped Prices for 2012-13

In 2011, a CPI price cap was applied to the retail and distribution component of water and wastewater charges in 2011-12 and 2012-13 for specified customers, under the *South East Queensland Water (Distribution and Retail Restructuring) Act 2009*. The specified customers include residential and small business customers and any other customer who passes on charges to either of these groups.

For 2012-13, the CPI cap is 1.3%, and is applied to the fixed and volumetric components of charges - after deducting council rebates and subsidies.

Consistent with the approaches adopted by the entities, the Authority has reviewed all charges against the CPI cap except those specifically excluded (non-capped prices) which are dealt with further below.

The Authority notes that prices are set for a particular year in the preceding year and reflect an entity's budgeted revenues and costs for the following year.

On 13 June 2012, QUU announced that the retail and distribution component of residential water and wastewater prices was frozen across all council areas in 2012-13 (**Appendix B**). Non-residential water and wastewater charges were increased by 1.3%.

As noted above, changes in council subsidies must also be considered when considering changes in charges. Of QUU's participating councils, only Brisbane City Council (BCC) provides subsidies. These relate to:

(a) certain community organisations, including some retirement villages, kindergartens and not-for-profit sporting and community groups. The coverage and rate of this subsidy for wastewater services has been continued in 2012-13; and

(b) eligible pensioners' water and wastewater bills. The coverage and rate of this subsidy and the maximum allowable amount has been continued in 2012-13[1].

The Authority considers that QUU has complied with the CPI price cap for 2012-13.

[1] BCC has continued its policy of a full pensioner subsidy of 40% of the total bill (net of the State Government pensioner water subsidy) and part pensioner subsidy of 20% of the total bill (net of the State Government pensioner water subsidy). The maximum amount of council subsidy for a full pensioner in 2012-13 remained at $476 and the maximum for a part pensioner also remained at $238 – the maximum amount is funded by both council and QUU. While not relevant to the CPI cap which only includes council subsidies, the Authority notes for completeness that the State Government pensioner water subsidy has also remained at $120 in 2012-13.

Residential Bills

The retail and distribution component of residential prices is capped, as noted above. To facilitate comparisons with prices prevailing in 2011-12, the Authority has continued to compare increases in residential bills[2].

The Authority did not calculate a residential bill consistent with Authority estimates of efficient costs in 2012-13 as costs are not disaggregated to customer groups by QUU.

In 2012-13, the Queensland Government has introduced a Bulk Water Rebate which is a one-off payment of $80 to be applied as a deduction on the first residential bill of 2013 (Department of Energy and Water Supply (DEWS) 2012).

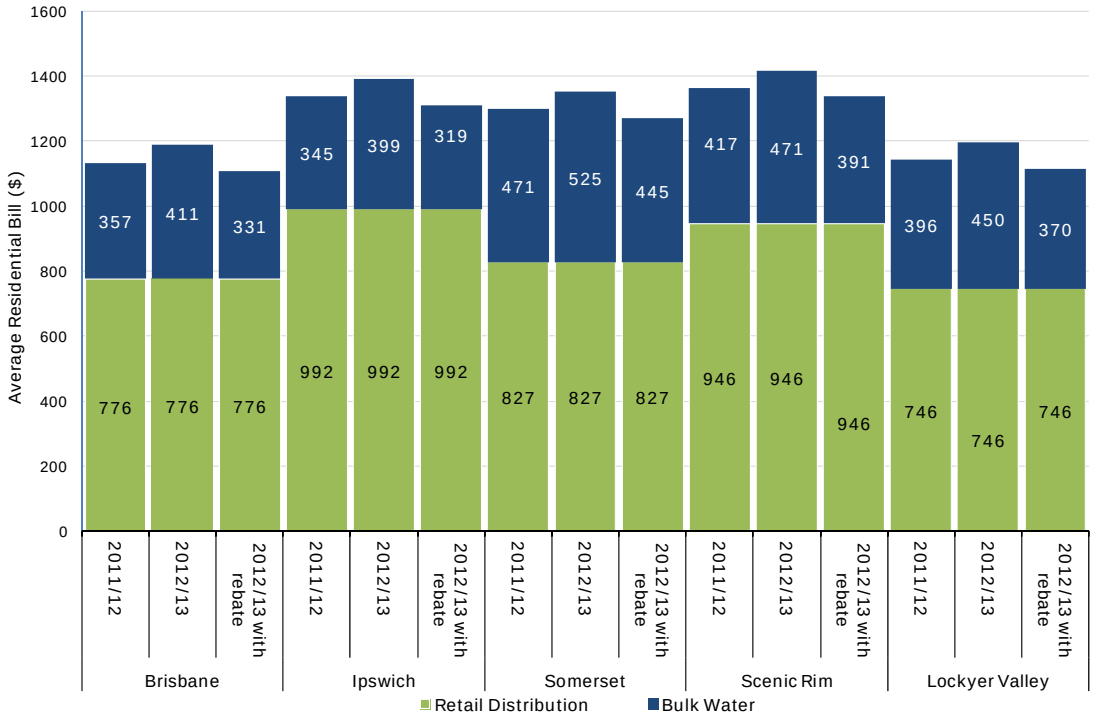
The Authority has calculated residential bills for 2012-13 and then separately identified the impact of the bulk water rebate.

Total residential bills for water and wastewater services would have increased by around $54 per year (or 4-5%) as a result of the increase in the bulk cost of water without the $80 bulk water rebate. As noted above, QUU froze the retail and distribution component of residential prices.

The residential bill includes water and wastewater, and wastewater has no bulk water component.

[2] As in last year's price monitoring report, the residential bills used in the Authority's analysis are estimated on the basis of usage of 200kL of water per year, as this is the basis adopted for national performance reporting (National Water Commission (NWC) 2010). As there is no national standard for wastewater, the analysis is based on the approach adopted in each council area. For Somerset and Lockyer Valley this is one pedestal per household while in other council areas the bill is based on a fixed access charge. The same approach has been adopted by the Queensland Water Commission (QWC) in its analysis of residential bills (QWC 2011).

Chart 1.1: Total Residential Bills



Notes: The Queensland Government Bulk Water Rebate is a one-off deduction to the first residential bill in 2013. Based on metered usage of 200kL per annum and one pedestal (where relevant). The retail/distribution component includes water and wastewater. Somerset data does not include Kilcoy. Lockyer Valley data is based on connected households receiving full pressure. Source: QUU (2012)

1.4.2 Prices for Other Users (Non Capped Prices)

Under the Direction, the Authority must monitor the change in revenue from these services compared to the change in the prudent and efficient costs of the relevant activity.

For the purposes of the comparison:

(a) QUU's 2011-12 and 2012-13 revenues are those set at the time prices are determined. Essentially, they reflect an entity's intended (budgeted) level of cost recovery; and

(b) the Authority compares the change in forecast QUU's revenues for non-capped services from 2011-12 with those forecast by QUU for 2012-13, with the change implied by the change in the Authority's estimates of prudent and efficient costs.

Under the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009*, the CPI price cap does not apply to trade waste, seepage[3], or recycled water services. The (then) QWC has previously advised that one-off sundry services are not capped.

[3] Seepage water is water that seeps from the ground into that part of a structure below ground level (e.g. tunnels and underground car parks). QUU does not currently provide seepage water services.

QUU provided information on revenues for trade waste, recycled water and sundry services. Trade waste and recycled water services are included as part of the wastewater activity[4] provided by QUU. Sundry services relate to both water and wastewater activities.

Revenues from these specific non-capped services are forecast to increase by 1.19% in 2012-13 (due to a significant rise in trade waste revenues) compared to the Authority's estimated increase in prudent and efficient costs of 4.21% (Chart 1.2 and Table 1.2) for the activity as whole.

QUU harmonised the structure of trade waste pricing in 2012-13, with both Brisbane and Ipswich having the same five categories of charges from 1 October 2012. Previously, Brisbane had four categories and Ipswich had three. However, the level of trade waste prices from 1 October 2012 remains higher in Ipswich than in Brisbane, and reflects an increase of 1.3% in Ipswich and 2.5% in Brisbane.

The prices of recycled water and sundry services have increased by 1.3%[5].

The Authority notes that water and wastewater revenues do not exceed costs (section 1.13). Therefore, there is no evidence of an exercise of market power in 2012-13.

Table 1.2: Change in Non-capped Revenues

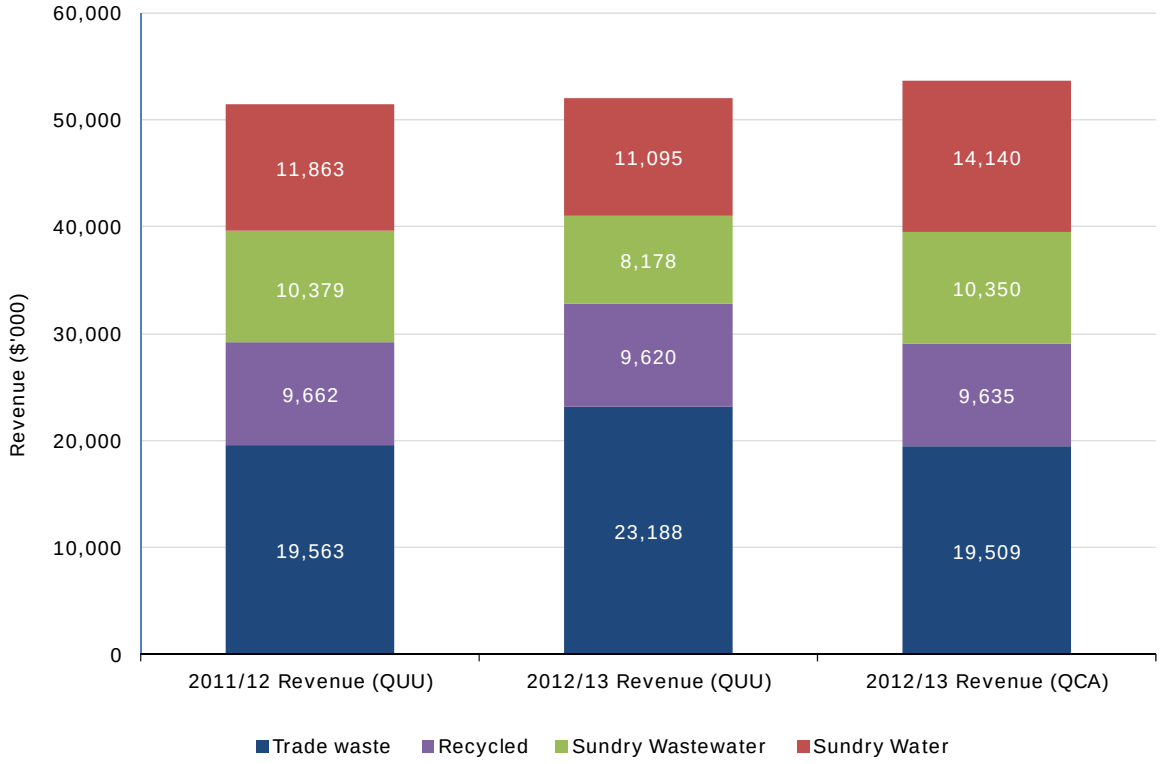
	QUU 2011-12	***QUU Forecast 2012-13***	***QCA Forecast 2012-13***
Trade waste revenues ($m)	$19.56	$23.19	$19.51
% change from 2011-12		18.53%	-0.28%
Recycled water revenues ($m)	$9.66	$9.62	$9.64
% change from 2011-12		-0.44%	-0.28%
Sundry wastewater revenues ($m)	$10.38	$8.18	$10.35
% change from 2011-12		-21.21%	-0.28%
Sundry water revenues ($m)	$11.86	$11.09	$14.14
% change from 2011-12		-6.47%	19.20%
Total Revenues ($m)	$51.47	$52.08	$53.66
% change from 2011-12		1.19%	4.21%

Source: QUU (2012 and 2011), QCA (2011), QCA (2012).

[4] As the 'activity' is a higher-level cost grouping than 'service', the costs of the relevant activity include the costs of capped and non-capped services relevant to that activity (see SEQ Framework Report 2010). The Direction does not require a comparison of non-capped revenues with the costs of providing non-capped services. Costs are not available on this disaggregated basis across all geographic areas.

[5] There are slight variations in the percentage increase due to the rounding of prices. As a result, the price of some non-capped sundry services (photocopying and replacement fee for a lost or damaged I-tag for the supply of water from a potable filling station) have increased by up to 3.3%.

Chart 1.2: Non-Capped Revenues ($'000)



Note: 2012-13 QCA data for each non-capped wastewater service = 2011-12 revenue multiplied by -0.25.%, the increase in wastewater activity costs (MAR, see section 1.13). 2012-13 QCA data for non-capped sundry water services = 2011-12 revenue multiplied by 19.2%, the increase in water activity costs. Source: QUU (2012), QCA (2011), QCA (2012).

1.4.3 Average Prices

There is a wide range of prices set by QUU relating to the range of services provided to each of the previous council areas and customer groups in SEQ.

For comparative purposes, the Authority has noted the changes in average prices (as well as residential bills above). Average prices provide, at best, a broad overview of price changes.

QUU's average water and wastewater prices increased in 2012-13. For reasons identified further below, the average price charged by QUU differs from that implied by the Authority's assessment of prudent and efficient costs. Charts 1.3 and 1.4, and Table 1.3 refer.

Prices are not necessarily set by the entities on the basis of costs alone, although QUU has advised that costs, demand and customer impacts were key factors in 2012-13.

Also indicated is the share of average prices accounted for by bulk water charges. It is assumed that, based on the Government's policy, the bulk water prices charged by the SEQ Water Grid Manager (WGM) are passed through to customers in full. There is no bulk water component in wastewater prices.

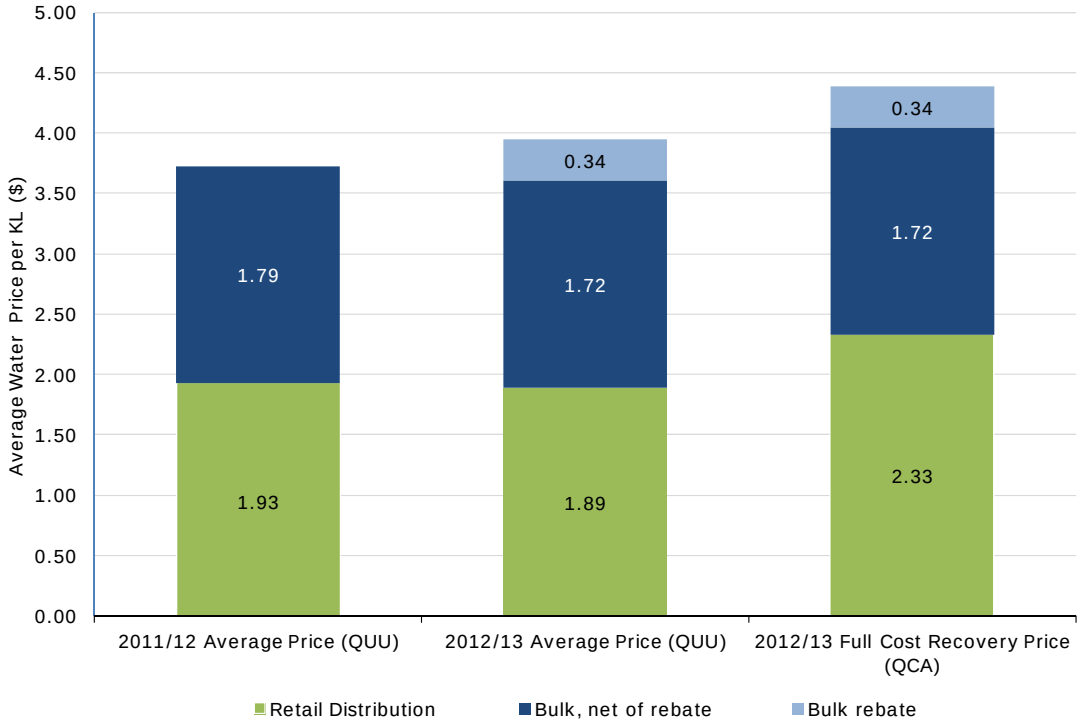
Average prices were calculated by dividing total revenues by volumes – per kl (for water) and per connection (for wastewater)[6]. Revenues and volumes for 2011-12 reflect the information available at the time of setting 2011-12 prices (and correspond with the data published in the Authority's Final Report for 2011-12). Revenues and volumes for 2012-13 reflect the information available at the time of setting 2012-13 prices. Wastewater revenues include those derived from trade waste and recycled water services, as well as from core wastewater services (the acceptance and disposal of sewage directly from users' premises to the sewer network).

The bulk water average price for 2012-13 has been reduced to reflect the State Government bulk water rebate for 2012-13.

The Authority's analysis suggests that average annual water and wastewater prices are slightly below those implied by the Authority's estimate of prices which would fully recover costs for 2012-13.

However, as noted in last year's SEQ Interim Price Monitoring Final Report for 2011-12, prices should ideally be set, and smoothed, over a longer period to avoid large annual variations.

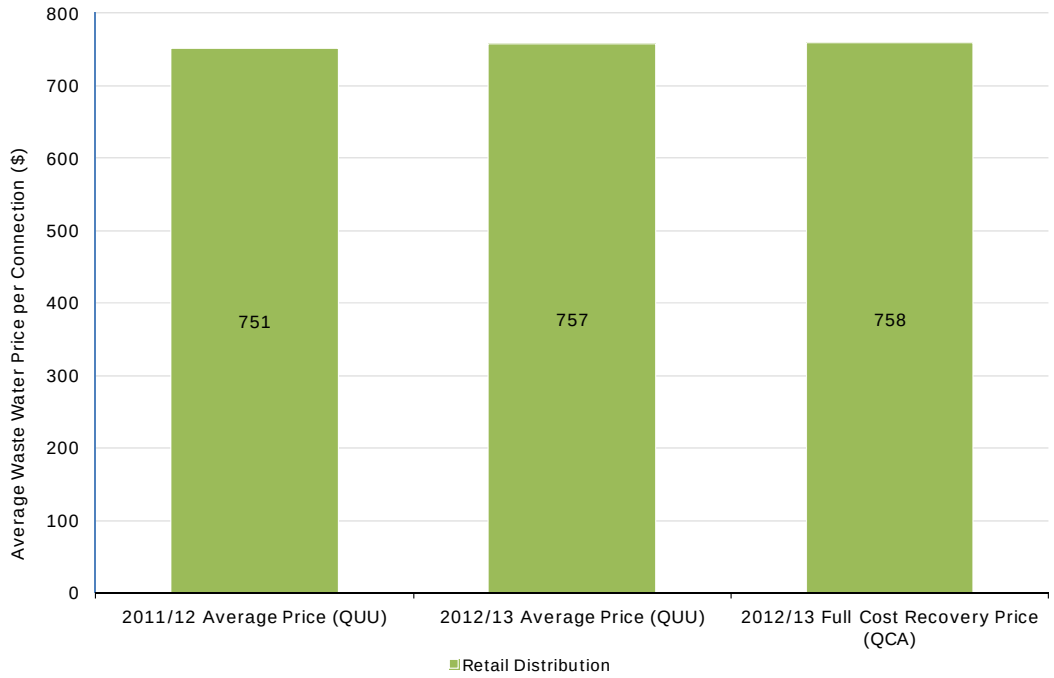
Chart 1.3: Average Water Prices



Source: QUU (2012), QCA (see section 1.1.3).

[6] The Australian Bureau of Statistics (ABS) adopts a similar approach to calculate an average water price in national water accounts – the ABS average price is derived by dividing a state's total residential water revenue ($) by residential water consumption (kL) (ABS, 2010).

Chart 1.4: Average Wastewater Prices



Note: Differs from previous data on non-capped revenues as average wastewater prices include revenues from core wastewater services and also take connections into account. Source: QUU (2012), QCA (see section 1.13).

Table 1.3: Average Prices[ab]

	2011-12 Average Price (QUU)	*2012-13 Average Price (QUU)*	*2012-13 Full Cost Recovery Price (QCA)[#]*
Water ($/kl)	$3.72	$3.95	$4.39
% increase from 2011-12, attributable to:		6.04%	17.90%
Bulk water price increases		7.27%	7.27%
Distribution and retail price increases		-1.23%	10.63%
Wastewater ($/connection)	$750.67	$757.14	$758.21
% increase from 2011-12		0.86%	1.00%

Note [a] Average QUU water price = Annual QUU water revenue ($) / total kl sold. [b] Average QUU wastewater price = Annual QUU wastewater revenue ($) / total connections. [#] Full Cost Recovery Price = QCA MAR / QCA kL (water) or connections (wastewater). Percentages reflect non-rounded data. Source: QUU (2012 and 2011), QCA calculations.

1.5 Demand

The cost of providing water and wastewater services is affected by the quality and the quantity of the services provided. For the purposes of the current review, the Authority has accepted the current standards of service.

Estimates of demand for water and wastewater have a direct impact on the prudency and efficiency of operating and capital expenditure, as well as on the average prices paid.

QUU's Submission

In its initial submission, QUU submitted that demand forecasts are essentially based on two core components: an absolute component representing the population or connections; and a rate of usage usually referred to in litres per person per day (l/p/d) or litres per connection per day (l/c/d). Key factors include:

(a) the number of existing residential and non residential connections;

(b) new residential and non-residential connections (growth in connections);

(c) changes in water usage behaviour by customers which can be driven by water restrictions and water efficiencies implemented on customer premises as well as general weather conditions; and

(d) background leakage.

QUU also identified differences in its forecasting approach and estimates for annual pricing purposes and that adopted for longer term capital planning purposes.

Population and Connections

QUU noted that its population forecasts are drawn from a range of sources including the SEQ Water Strategy, the SEQ Regional Plan, town planning decisions made by councils and detailed projections of population dynamics, residential dwelling activity and land supply provided by the Demography and Planning unit within Queensland Treasury's OESR (formerly known as the Planning Information and Forecasting Unit (PIFU)).

For pricing purposes, the focus is on estimating growth in the number of properties, which is then added to the properties in the billing system. The State Government's medium term planning dwelling forecasts were adjusted by QUU to reflect lower population growth series and the proportion of new dwellings connected to its network as reflected in the billing system.

For capital planning purposes, the serviced equivalent population (EP) projections and planning and design standards define the future capacity of the system. Deriving the required EP projections for capital planning purposes requires:

(a) the residential population estimates to be adjusted to reflect the serviced (connected) population. Non-residential demand is measured in EP units. Non-residential demand is developed by QUU based on its customer database, planning schemes and density assumptions;

(b) projections to be appropriate to the distribution network planning level. Street level water reticulation planning and sewerage catchment planning typically require the population distribution to be estimated at an individual property level;

(c) projections over a long period of time, including the appropriate asset service life (which may be up to 80 years and extend beyond the limit of current population projections), intermediate years (five-yearly for 20 years) and ultimate serviced populations (the EP capacity under current planning schemes); and

(d) data to be drawn from a wide variety of sources (OESR being only one source of input) and key assumptions including on land use planning made including on densities (EP/ha) and redevelopment takeup.

Per Capita Demand – Litres Per Person Per Day (l/p/d)

QUU noted that per capita demand has experienced significant fluctuations over the last decade as a result of the millennium drought, and the long term impact is not yet clear. Factors affecting the rate of demand include day-to-day changes in temperature and rainfall, medium term climate effects such as drought and water restrictions, and longer term changes arising from water efficient appliances, increased usage of alternative sources and permanent water conservation measures.

QUU anticipated that current low levels of per capita demand would continue in the short term, with some upwards creep to a plateau at the regional planning values of 200-230 l/p/d in the SEQ Water Strategy.

QUU noted it has two distinct measures of the level of demand:

(a) a short term (current) measure – adopted for pricing purposes, used as a basis for estimating demand-related operational expenditure such as electricity and chemicals, and in the prioritisation of the five-year capital investment program.

    For pricing purposes in 2012-13, QUU adopted a slightly higher daily consumption forecast than current recorded levels of demand. QUU estimated that residential per capita demand will increase by 5 l/p/d (from the current average consumption volume in each council) to a maximum of 200 l/p/d.

    For non-residential per capita demand, QUU estimated consumption per property will increase by 0.5% per annum. QUU submitted that this is a conservative growth estimate as production demand is currently reasonably static and water substitutes (i.e. recycled water) commonly used by non-residential customers, tend to offset potable water demand growth.

    QUU noted that daily consumption (l/p/d) is converted to consumption per property (kL per annum) based on its estimate of average persons per property;

(b) a long term measure – adopted for capital planning and infrastructure design purposes. Assets with high capital costs and long lives are planned around an underlying long-term average per capita demand and peak demand which is typically a multiple of the long term average l/p/d measure. QUU submitted the same long-term demand parameters as in last year's submission:

    (i) for water, QUU adopted an average day demand of 230 l/p/d and adjusted peak loads (of three to five times this level) in its infrastructure design standards[7]. QUU also noted that local street water mains are typically sized to meet fire fighting requirements as these typically exceed peak customer loads; and

    (ii) for wastewater, QUU's infrastructure design standards reflect average dry weather flows of 210 l/p/d (comprised of internal household water use of 150 l/p/d and groundwater infiltration of 60 l/p/d) and peak wet weather flows of five times the average dry weather flows (in accordance with the Department of Environment and Resource Management (DERM) Planning Guidelines). Sewage treatment plants are designed to provide full treatment at three times the average dry weather flow and primary treatment at up to five times this level.

[7] QUU noted that these parameters were reviewed in 2009 in light of reduced customer usage. The average day water demand of 310 l/p/d was then reduced to 230 l/p/d.

QUU submitted it expects non-revenue water to fall from 12% in 2012 to 11.8% for the remaining years until 2015. Non-revenue water includes network leakage, water theft and authorised unbilled water consumption (e.g. fire fighting and pipe flushing).

Authority's Analysis

The Authority engaged SKM to review the appropriateness of QUU's demand forecasts for water and wastewater activities from 1 July 2012. SKM was required to determine whether the demand forecasts have been developed using appropriate forecasting methodologies and reflect reasonable data assumptions. SKM was also required to report on whether the issues identified by the Authority in its SEQ Interim Price Monitoring Final Report for 2011-12 have been addressed.

In relation to demand forecasting, the Authority recommended in 2011-12 that QUU should:

(a) document its approach to forecasting demand for all purposes and establish processes for the collation of data; and

(b) take into account the response of consumers to increasing prices (that is, estimate the price elasticity of demand) when estimating future consumption.

The Authority has provided the previous forecasts for 2011-12 based on the information available at the time of pricing in 2011-12 and published in the SEQ Interim Price Monitoring Final Report for 2011-12. These previous forecasts are shaded to clearly distinguish them from more recent information now available for 2011-12.

Methodology

The Authority acknowledges that QUU has documented its approach to forecasting demand for all processes and has provided this information to the Authority and SKM for review.

SKM noted that current demand forecasting approaches are relatively unsophisticated. In the current circumstances, where there is a lack of historical data and uncertainty about demand outcomes following the lifting of restrictions, SKM considered that this is an appropriate approach.

Overall, SKM considered the general methodology adopted by QUU for pricing purposes was reasonable for 2012-13. At the same time, SKM made adjustments to reflect more recent data and other minor changes. These are discussed further below.

However, SKM recommended the entities should move to improve their data collection and increase the sophistication of their demand forecasting approach over time. SKM identified three main approaches for improving the entities' demand forecasting:

(a) Sydney Water panel data-based analysis. This analysis estimates the impact on water demand from price changes (price elasticity), water efficiency program participation and the implementation of water wise rules.

The Authority notes that external expert stakeholders at an Independent Pricing and Regulatory Tribunal (IPART) demand forecasting workshop agreed that Sydney Water's model was likely to be the best available approach to forecast water demand (IPART 2012). IPART accepted Sydney Water's proposed approach;

(b) end-use modelling approaches. End-use modelling generates forecasts of future demand to be aggregated based on estimates of the individual end uses of water. The

Authority notes that Victorian retail water entities adopt this approach (for example, see South East Water 2012); and

(c) other types of econometric analysis, including a range of regression-based cross-sectional and time series approaches. These can be used to complement other forecasting approaches.

SKM considered that Sydney Water panel data-based analysis was ruled out for SEQ, as the entities do not have access to detailed information about which of their customers have participated in retrofit and rebate programs, which of their customers remain in the owner-occupier category and a host of other variables collected through longitudinal survey by Sydney Water. SKM also considered the cost of this approach.

SKM noted that the entities do have access to a number of end-use monitoring studies, and econometric modelling could complement end-use modelling approaches.

SKM recommended that the entities move to adopt end-use modelling. SKM recommended the features of such a model, and suggested a series of practical steps that would allow the entities to incorporate end-use modelling in demand forecasting in 2014-15.

The Authority also notes that the NWC and the Water Services Association of Australia (WSAA) have supported the development of an end-use model to assist water services providers across Australia and recommend the use of this model (Turner et al 2010)[8]. The Authority understands that the Queensland Government used an end-use model in the formation of the SEQ Water Strategy.

However, as noted above, a recent expert workshop identified Sydney Water's model as the best available approach. Further, in its 2011-12 Final Report the Authority recommended that QUU should explicitly include price elasticity in demand forecasting once rebound is achieved[9].

A longitudinal data collection approach would enable panel data-based analysis as adopted by Sydney Water, which recognises the likelihood of price elasticity being dependent on home ownership status of the occupants, the impact of property size and household income on water demand, household habit formation and a host of other factors. Alternatively, end-use modelling appears to be particularly suited where entities are implementing demand management options and want to assess their impact. Econometric analysis can also inform an evaluation of scarcity pricing.

Given the uncertainty and lack of data at this point in time, it would seem appropriate to develop and compare different approaches to demand forecasting in SEQ. The Authority will further consider the most appropriate way forward for its Final Report.

For 2012-13, the Authority considers that QUU's demand forecasting methodology adopted for pricing purposes can be considered to be appropriate for the purpose of the forecast and the availability of current information.

[8] Turner, A., Willets, J., Fane, S., Giurco, D., Chong, J., Kazaglis, A., and White S., 2010. Guide to Demand Management and Integrated Resource Planning. Prepared by the Institute for Sustainable Futures, University of Technology Sydney for the NWC and the WSAA.

[9] In the 2011-12 Final Report the Authority considered that QUU should take the impact of price increases on demand into account in preparing its price path for the six-year period from 1 July 2013, as SKM has forecast a return to more normal levels of consumption in 2015-16 for urban councils and 2018-19 for rural councils. Amendments to legislation in December have removed the requirement for councils to publish a final price path.

The Authority considers that:

(a) QUU's general demand forecasting methodology for 2012-13 is reasonable; and

(b) Going forward, explicit inclusion of price elasticity for water should be incorporated once the estimated level of rebound is achieved. The entities should develop and compare different approaches to demand forecasting for their future use in SEQ.

Residential Water Connections

QUU's forecasts of residential connections are based on the latest information on 2011-12 properties in the billing system, to which a growth rate is then applied. QUU stated that connections growth is based on the State Government's dwelling forecasts, adjusted to reflect the use of lower rather than medium population series and the proportion of connected properties (95% of new growth).

Overall, QUU has forecast a 1.7% growth in annual connections from 2011-12 to 2015-16, with growth ranging from 1.2% in Brisbane to 4.6% in the Scenic Rim.

Table 1.4: QUU Residential Water Connections

	2011-12 Submission	***2012-13 Submission***				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR[1] 2011-16*
Brisbane	399,727	399,130	403,920	408,767	413,672	1.2%
Ipswich	63,552	63,108	65,632	68,268	71,009	4.0%
Lockyer Valley	10,084	10,180	10,526	10,884	11,251	3.4%
Scenic Rim	5,844	6,168	6,452	6,739	7,031	4.5%
Somerset	4,667	4,934	5,121	5,310	5,503	3.7%
QUU total	**483,874**	**483,520**	**491,651**	**499,968**	**508,466**	**1.7%**

*Note: 2011-12 shaded data reflects QUU's forecasts for 2011-12 as published in the SEQ Price Monitoring Report for 2011-12. This data is provided for comparison purposes only. * Estimated Actual. [1] CAGR denotes compound annual growth rate. Source: QUU (2011 & 2012) data template, SKM (2012).*

In the Authority's Final Report for 2011-12, it considered that the May 2011 OESR forecasts should be adopted to inform final prices for 2011-12 and for price monitoring. The Authority also accepted the OESR's advice that its low population growth series is more representative of its short term expectations than the medium series. As the OESR did not publish updated dwelling data in May 2011, the Authority accepted SKM's adjustment to the OESR 2008 medium series dwelling growth to reflect lower population growth expectations.

For this year's review, SKM recommended continued use of the low series population growth data. SKM noted that ABS data released in June 2012 confirmed that actual population growth is more closely tracking the low population series.

In January 2012, the OESR released updated dwellings data. This updated medium dwelling series was adjusted by QUU to obtain a low dwelling series. QUU applied the ratio of the low to medium population (2011) series to the updated medium dwelling numbers resulting in a low dwelling series[10]. The Authority notes that this adjustment is consistent with the method applied by SKM in last year's review.

SKM also compared QUU's connection growth forecasts at the time of price setting to the expected rate of dwelling growth, based on 2011 OESR data and assuming 95% of new dwellings are connected properties. SKM noted that QUU had forecast a marginally higher growth rate in the Scenic Rim and Somerset compared to those expected using SKM's estimates of dwellings growth based on OESR data.

SKM stated that the difference between QUU's and SKM's estimates of dwelling growth is due to the difference in interpolation approach required to calculate dwellings in the years the lie between the published OESR data for 2010-11 and 2015-16. QUU interpolates using an annual percentage growth rate while SKM originally considered a uniform annual increase in the number of connections.

Given this, the Authority asked the OESR for its advice on the method of interpolation to arrive at dwellings estimates in the years that lie in between 2010-11 and 2015-16. The OESR advised a method which involves the use of annual population data and interpolated occupancy rates. SKM considered that OESR's advice represents the best available method, as it produces an annual dwellings estimate that is consistent with annual population projections. The OESR provides the State Government's official population forecasts and its advice on population and dwellings is based on expert advice and knowledge.

SKM therefore estimated the annual growth in projected dwellings, using Queensland Government projections (2011 edition) and OESR advice on interpolation. The growth in dwellings differs annually over 2010-16. However, the annual growth rate in 2012-13 is very similar to the average growth rate over 2011-16.

[10] $QUU\ Dwellings\ (Low\ 2011\ Series) = OESR\ Dwellings\ (Medium\ 2011\ Series) * \frac{OESR\ Population\ (Low\ 2011\ Series)}{OESR\ Population\ (Medium\ 2011\ Series)}$

Table 1.5: Residential Connections Growth Rates (%)[11] p.a.

	QUU 2011-12 Submission 2011-14	*QUU 2012-13 Submission 2011-16*	*SKM Dwelling[a] 2010-16*
Brisbane	1.6%	1.2%	1.1%
Ipswich	3.6%	4.0%	4.0%
Lockyer	3.3%	3.4%	2.5%
Scenic Rim	1.6%	4.5%	1.9%
Somerset	1.6%	3.7%	2.1%
QUU	**1.9%**	**1.7%**	**1.6%**

Note: 2011-12 shaded data reflects QUU's forecasts for 2011-12 as published in the SEQ Price Monitoring Report for 2011-12. This data is provided for comparison purposes only. a This average growth rate is provided for comparison only, SKM's recommended annual growth rates over the period, as noted in Table 1.6 below. Source: QUU (2011 & 2012) data template, SKM (2012).

Table 1.6: Recommended Connections Growth Rates

	2012-13	*2013-14*	*2014-15*	*2015-16*
Brisbane	1.3%	1.2%	1.1%	1.1%
Ipswich	4.1%	4.0%	4.0%	4.0%
Lockyer	3.3%	3.3%	3.4%	3.6%
Scenic Rim	4.6%	4.4%	4.4%	4.6%
Somerset	3.6%	3.6%	3.7%	3.9%
QUU	**1.7%**	**1.6%**	**1.6%**	**1.6%**

Source: SKM (2012).

By applying the calculated growth rate for 2012-13 to 2011-12 connections, SKM has calculated its recommended water connections for 2012-13 (see Table 1.7 below). The Authority's previous forecast of 2012-13 residential connections as published in its SEQ Interim Price Monitoring Final Report for 2011-12 are also provided for comparison purposes. This data is shaded to distinguish it as the Authority's previous forecast. It has not been used by QUU in its current forecasts.

[11] Growth rates are compound annual growth rates.

Table 1.7: Recommended Residential Water Connections

	2011-12 Review	***2012-13 Review***			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*Growth in 2012-13*
Brisbane	397,924	404,149	408,837	413,449	1.3%
Ipswich	64,238	65,668	68,264	70,972	4.1%
Lockyer Valley	10,034	10,521	10,870	11,242	3.3%
Scenic Rim	5,892	6,453	6,740	7,034	4.6%
Somerset	4,712	5,111	5,295	5,490	3.6%
Total Recommended	**482,801**	**491,902**	**500,007**	**508,187**	**1.7%**
QUU Proposed	483,874	491,651	499,968	508,466	1.7%
Difference	**-1,069**	**251**	**39**	**-279**	**-**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. This data is provided for comparison purposes only. Source: SKM (2011 and 2012).

The Authority accepts SKM's residential water connection estimates.

Residential Water Volumes

QUU estimated water volumes using assumptions of residential occupancy rates, average usage and connections (see Tables 1.8 to 1.10 below). Connections are adjusted to reflect only those properties that use water, or to exclude undeveloped land where an access charge is levied but no water is consumed. This is the same methodology as adopted by QUU in its 2011-12 submission.

The Authority notes there are slight changes in the QUU's occupancy rates due to its use of the updated 2011 dwelling series.

QUU submitted that consumption in 2011-12 was influenced by high rainfall and that there is a reasonable likelihood that 2012-13 will be a drier year with higher consumption. QUU applied a slightly higher forecast per capita demand to 2012-13 than current demand levels.

Table 1.8: QUU Average Residential Use (l/p/d)

	2011-12 Submission	***2012-13 Submission***			
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*
Brisbane	175	170	175	180	185
Ipswich	175	169	175	181	187
Lockyer Valley	158	146	150	154	158
Scenic Rim	158	155	160	165	170
Somerset	158	160	165	170	175

*Note: 2011-12 shaded data reflects QUU's forecasts for 2011-12 from its 2011-12 Submission. This data is provided for comparison purposes only. * Estimated Actual. Source: QUU (2011 & 2012), SKM (2012).*

Table 1.9: QUU Residential Occupancy Rates

	2011-12 Submission 2011-12	***2012-13 Submission 2012-13***
Brisbane	2.36	2.46
Ipswich	2.6	2.70
Lockyer	2.6	2.61
Scenic Rim	2.6	2.53
Somerset	2.6	2.43

Note: 2011-12 shaded data reflects SKM's derived numbers for 2011-12 (which was held constant in the 2011-12 submission) from QUU's 2011-12 stated methodology to calculate occupancy rates. This data is provided for comparison purposes only. Source: QUU (2011 & 2012).

Table 1.10: QUU Percentage of Connections consuming Water

	2011-12 Submission %	***2012-13 Submission %***
Brisbane	97	97
Ipswich	92	93
Lockyer	75	72
Scenic Rim	93	89
Somerset	87	84

Note: 2011-12 shaded data reflects QUU's forecasts for 2011-12 from its 2011-12 Submission. This data is provided for comparison purposes only. Source: QUU (2011 & 2012).

In response to SKM's query on the difference between the portion of connections consuming water in the 2011-12 submission and that in the 2012-13 submission, QUU indicated that the

difference in each council area is due to improved data cleansing of QUU's information and reflects the continually improving accuracy of the data each year.

Table 1.11: QUU Residential Water Demand (ML/year)

	2011-12 Submission	***2012-13 Submission***				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Brisbane	58,368	59,158	61,686	63,949	66,243	3.8%
Ipswich	9,744	9,739	10,510	11,201	11,973	7.1%
Lockyer Valley	1,141	1,020	1,077	1,146	1,224	6.3%
Scenic Rim	816	784	845	909	977	7.6%
Somerset	608	588	631	672	717	6.8%
QUU	**70,677**	**71,289**	**74,750**	**77,878**	**81,133**	**4.4%**

*Note: 2011-12 shaded data reflects QUU's forecasts for 2011-12 from its 2011 Submission. This data is provided for comparison purposes only. * Estimated Actual. Residential water demand (ML/year) = litres per person per day x residential occupancy rate x number of connections that consume water x 365 / 1,000,000.*
Source: QUU (2011 & 2012).

In its previous review of QUU's approach, SKM stated its general preference for using average consumption per connection (litres per connection) instead of per person (litres per person). Data on consumption per connection is directly collected from the billing system and is therefore preferred to the per person method which requires a further assumption on average persons per connection. However, SKM acknowledged that, given the lack of historical data and as the l/p/d method has been adopted by the State Government for its water strategy, the l/p/d approach is reasonable for the time being.

Therefore, as in the previous review, SKM first reviewed occupancy rates. SKM adopted the low series population data on the basis of OESR advice and adjusted the dwelling data for consistency with this approach.

SKM's calculated occupancy rates are the same as those of QUU's.

In relation to average consumption, SKM stated that accurate forecasting is hampered by the lack of historical data on average consumption prior to the drought, the impact of the lifting of high-level restrictions and its replacement by Permanent Water Conservation Measures (PWCM). SKM noted that since the drought ended the weather has been relatively wet, which may have masked any potential rebound from the lifting of restrictions. SKM noted that a clearer picture of rebound may be available after 2012-13 when conditions are expected to be drier with Brisbane [and SEQ] having recently experienced a dry winter.

SKM confirmed its view from last year's review that rebound will occur over a four- to five-year period and settle at around the 200 l/p/d voluntary target set by the Queensland Government for SEQ as a whole. For the three relatively rural regions of Lockyer Valley, Scenic Rim and Somerset, an eight-year rebound period should apply. SKM did not receive additional or new information to change this view.

Taking current average residential consumption rates into account, SKM estimated that rebound would stabilise in 2015-16 in the urban councils of Brisbane and Ipswich at an average consumption of around 196 l/p/d. For the rural councils of Lockyer Valley, Scenic Rim and Somerset, SKM assumed average consumption would stabilise in 2018-19.

In summary, SKM obtained its 2012-13 l/p/d estimates by:

(a) identifying the actual residential consumption (l/p/d) for each council area in 2010-11 (and estimated actual l/p/d for Gold Coast, Logan and Redland council areas in 2010-11, from Allconnex's 2011-12 submission);

(b) calculating the average residential consumption for SEQ as a whole in 2010-11 (162 l/p/d, using connected population to weight the l/p/d for each council);

(c) estimating average consumption in each council area in 2015-16, assuming that average consumption in SEQ rebounds to 200 l/p/d and once rebound has occurred, average consumption in each council area reflects the same relative pattern of average consumption as in 2010-11. That is, councils with high l/p/d usage remain at relatively high l/p/d usage levels;

(d) calculating the growth in average consumption from 2011-12 to the year the rebound target is to be achieved; and

(e) applying the calculated growth rate to the estimated actual average consumption in 2011-12 to identify the l/p/d in 2012-13.

The resulting average consumption levels for each of the council areas are shown in Table 1.12. SKM noted that the recommended average residential water consumption rates are not significantly different from that proposed by QUU for 2012-13.

Table 1.12: Recommended Average Residential Water Usage (l/p/d)

	2011-12 Review	***2012-13 Review***				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*2015-16*
Brisbane	169	170	176	182	189	196
Ipswich	166	169	175	181	188	195
Lockyer Valley	147	146	150	153	156	160
Scenic Rim	154	155	158	161	164	168
Somerset	148	160	160	162	163	164

*Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. This data is provided for comparison purposes only. * Estimated Actual. Source: SKM (2011 & 2012).*

Consistent with QUU's methodology, SKM applied these adjusted inputs to form its recommended residential water volume. SKM's estimates of residential water demand in 2012-13 are slightly higher than QUU's.

Table 1.13: Recommended Residential Water Demand (ML/year)

	2011-12 Review	***2012-13 Review***			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Brisbane	59,202	61,954	64,819	67,794	4.6%
Ipswich	9,857	10,492	11,292	12,155	7.7%
Lockyer Valley	1,083	1,074	1,132	1,194	5.4%
Scenic Rim	763	836	891	948	6.5%
Somerset	546	612	637	664	4.1%
Total Recommended	**71,451**	**74,968**	**78,770**	**82,754**	**5.1%**
QUU Proposed	70,677	74,750	77,878	81,133	4.4%
Difference	**774**	**219**	**892**	**1,621**	**0.7%**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. This data is provided for comparison purposes only. Source: SKM (2011 & 2012).

The Authority accepts SKM's residential water demand estimates for 2012-13.

Residential Wastewater Connections

As for water, QUU used the number of billed connections in 2011-12 as the starting point for its residential wastewater connections forecasts. QUU then applied its estimate of growth in connections.

Table 1.14: QUU Residential Wastewater Connections

	2011-12 Submission	***2012-13 Submission***				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Brisbane	392,646	391,657	396,357	401,113	405,926	1.2%
Ipswich	57,216	56,989	59,269	61,650	64,125	4.0%
Lockyer Valley	4,129	4,240	4,384	4,533	4,686	3.4%
Scenic Rim	4,056	4,064	4,251	4,440	4,632	4.5%
Somerset	2,796	3,083	3.200	3,318	3,439	3.7%
Total	**460,842**	**460,033**	**467,461**	**475,054**	**482,808**	**1.6%**

*Note: 2011-12 shaded data reflects QUU's forecasts for 2011-12 from its 2011-12 Submission. This data is provided for comparison purposes only. * Estimated Actual. Source: QUU (2011 & 2012).*

As for water, SKM applied its estimate of dwellings growth to the latest 2011-12 data. SKM's estimate of residential wastewater connections are shown below.

Table 1.15: Recommended Residential Wastewater Connections

	2011-12 Review	***2012-13 Review***			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*Growth in 2012-13*
Brisbane	390,778	396,582	401,182	405,708	1.3%
Ipswich	57,620	59,301	61,645	64,090	4.1%
Lockyer Valley	4,102	4,382	4,528	4,682	3.3%
Scenic Rim	4,085	4,252	4,441	4,635	4.6%
Somerset	2,819	3,194	3,309	3,430	3.6%
Total Recommended	**459,405**	**467,711**	**475,105**	**482,546**	**1.7%**
QUU Proposed	460,842	467,461	475,054	482,808	1.6%[1]
Difference	**-1,437**	**250**	**51**	**-262**	**0.1%**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. This data is provided for comparison purposes only. Source: QUU (2011 & 2012), SKM (2012).

The Authority accepts SKM's residential wastewater connections estimates for 2012-13.

Non-Residential Water

QUU's non-residential water volumes are calculated based on the number of non-residential connections multiplied by the average daily consumption per connection (l/c/d). The number of non-residential connections is based on 2011-12 data and forecast growth rates. Non-residential connections are split into monthly billed connections (large users) and quarterly billed connections.

QUU projected the same growth in quarterly non-residential connections as for residential customers, with no growth for monthly billed connections. Average consumption per connection is forecast to grow at 0.5% per annum compared with 1% per annum in its 2011-12 submission. The same growth rates in average consumption were applied to monthly and quarterly non-residential accounts.

Table 1.16: QUU Non-residential Water Connections

	2011-12 Submission	***2012-13 Submission***				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Brisbane	30,261	30,497	30,857	31,221	31,589	1.2%
Ipswich	1,970	1,965	2,043	2,125	2,210	4.0%
Lockyer Valley	544	511	528	546	564	3.4%
Scenic Rim	1,355	1,019	1,066	1,113	1,162	4.5%
Somerset	655	567	589	611	633	3.7%
QUU total	**34,785**	**34,559**	**35,083**	**35,616**	**36,158**	**1.5%**

*Note: 2011-12 shaded data reflects QUU's forecasts for 2011-12 from its 2011-12 Submission. This data is provided for comparison purposes only. * Estimated Actual. Source: QUU (2011 & 2012), SKM (2012).*

Table 1.17: QUU Percentage of Connections consuming Water

	2011-12 Submission %	***2012-13 Submission %***
Brisbane	91	90
Ipswich	92	92
Lockyer	69	73
Scenic Rim	50	64
Somerset	63	68

Note: 2011-12 shaded data reflects QUU's forecasts for 2011-12 from its 2011-12 Submission. This data is provided for comparison purposes only. Source: QUU (2011 & 2012).

In response to SKM's query on the difference between the portion of connections consuming water in the 2011-12 submission and that in the 2012-13 submission, QUU indicated that the difference in each LGA is due to improved data cleansing of QUU's information and reflects the continually improving accuracy of the data each year.

Table 1.18: QUU Non-residential Water Demand (ML)

	2011-12 Submission	***2012-13 Submission***				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Brisbane	32,530	34,017	34,354	34,696	35,042	1.0%
Ipswich	4,514	4,441	4,519	4,600	4,683	1.8%
Lockyer Valley	289	263	762	775	789	42%
Scenic Rim	345	330	347	364	382	5.0%
Somerset	559	648	660	672	685	1.9%
QUU	**38,237**	**39,699**	**40,642**	**41,107**	**41,581**	**1.6%**

*Note: 2011-12 shaded data reflects QUU's forecasts for 2011-12 from its 2011-12 Submission. This data is provided for comparison purposes only. * Estimated Actual. Source: QUU (2011 & 2012), SKM (2012).*

SKM noted that the non-residential water demand for the Lockyer Valley increased by almost 190% between 2011-12 and 2012-13 due to the plans for a large water user locating a plant(s) that is expected to consume about 0.5 GL p.a. in the Lockyer Valley.

In the previous review, SKM noted that in relation to connections growth SKM prefers to forecast non-residential connection numbers as a function of economic activity as well as residential connections or population. However, as historical information is not available, SKM considered that increasing the quarterly non-residential water connections at the same rate as residential connections is appropriate (see table below). SKM accepted that monthly non-residential connections would not increase in the short term.

In relation to average non-residential consumption per connection (l/c/d), SKM noted that rebound is unlikely to be a major issue (unlike residential consumption). Reduction in business consumption during the drought is considered to be largely structural. Water Efficiency Management Plans (WEMPs) constrain growth in average water consumption. SKM therefore accepted QUU's estimates of average non-residential consumption per connection, on the basis of available information. QUU estimated average consumption per connection is forecast to grow at 0.5% through the forecast period.

SKM considered QUU's growth rate of 0.5% per annum to be reasonable. SKM also accepted the assumption that the number of monthly accounts remains constant over the forecast period.

Table 1.19: Recommended Non-residential Water Connections

	2011-12 Review	***2012-13 Review***			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*Growth in 2012-13*
Brisbane	30,303	30,874	31,226	31,572	1.2%
Ipswich	2,042	2,044	2,124	2,207	4.0%
Lockyer Valley	551	528	546	564	3.3%
Scenic Rim	1,373	1,066	1,114	1,162	4.6%
Somerset	664	587	608	631	3.6%
Total Recommended	**34,933**	**35,099**	**35,617**	**36,136**	**1.6%**
QUU Proposed	34,785	35,083	35,616	36,158	1.5%
Difference	**148**	**16**	**1**	**-22**	**0.1%**

Note: 2011-12 shaded data reflects Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. This data is provided for comparison purposes only. Source: SKM (2011 & 2012).

SKM applied its adjusted inputs to connections that use water to form its recommended non-residential water volume.

Table 1.20: Recommended Non-residential Water Demand (ML/year)

	2011-12 Review	***2013-13 Review***			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Brisbane	32,575	34,357	34,683	35,040	1.0%[1]
Ipswich	4,387	4,519	4,600	4,684	1.8%
Lockyer Valley	293	761	774	788	44.1%
Scenic Rim	350	347	364	382	5.0%
Somerset	567	660	672	685	1.9%
Total Recommended	**38,172**	**40,644**	**41,093**	**41,579**	**1.6%**
QUU Proposed	38,237	40,642	41,107	41,581	1.5%
Difference	**-65**	**2**	**-14**	**-1**	**0.1%**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12. This data is provided for comparison purposes only. [1] *The growth in Brisbane's non-residential consumption is lower than the combined growth of 1.2% in connections and 0.5% in average consumption due to the assumption that the monthly-billed connections [whose demand comprises 59% of total non-residential water demand] remain constant through the forecast period. Source: SKM (2011 & 2012).*

The Authority accepts SKM's non-residential water demand estimates.

Non-residential Wastewater Connections

QUU used the number of connections billed in 2011-12 as the starting point for its non-residential wastewater connections forecasts. QUU then applied its estimate of growth in connections which was the same as the growth rate in residential water connections (barring monthly accounts which were held constant).

Table 1.21: QUU Non-residential Wastewater Connections

	2011-12 Submission	***2012-13 Submission***				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Brisbane	29,079	29,211	29,556	29,905	30,258	1.2%
Ipswich	1,797	1,965	2,038	2,119	2,203	3.9%[1]
Lockyer Valley	385	370	383	396	409	3.4%
Scenic Rim	786	739	773	807	842	4.5%
Somerset	494	423	439	455	472	3.7%
Total	**32,541**	**32,708**	**33,189**	**33,683**	**34,186**	**1.4%**

*Note: 2011-12 shaded data reflects QUU's forecasts for 2011-12 from its 2011 Submission. This data is provided for comparison purposes only. * Estimated Actual. [1] Differs from residential growth due to constant monthly accounts. Source: QUU (2011 & 2012).*

In the previous review SKM recommended that, in the absence of better information, the ratio of residential to non-residential properties be maintained. SKM noted that by increasing the quarterly non-residential wastewater connections by the same rate as residential wastewater connections, QUU maintains the ratio between the two. SKM accepted that monthly connections would remain constant in the short term.

The Authority notes that QUU has now adopted this recommendation for 2012-13.

SKM's estimates of non-residential wastewater connections are shown in Table 1.22.

Table 1.22: Recommended Non-residential Wastewater Connections

	2011-12 Review	***2012-13 Review***			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*Growth in 2012-13*
Brisbane	29,112	29,578	29,921	30,259	1.3%
Ipswich	1,856	2,040	2,120	2,203	3.8%
Lockyer Valley	390	382	395	409	3.3%
Scenic Rim	796	773	808	843	4.6%
Somerset	501	438	454	471	3.6%
Total Recommended	**32,655**	**33,212**	**33,698**	**34,184**	1.5%
QUU Proposed	32,541	33,189	33,646	34,149	1.4%
Difference	**114**	**23**	**52**	**35**	**0.1%**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 in its 2011-12 submission. This data is provided for comparison purposes only. Brisbane units are the number of properties, Ipswich, Lockyer Valley and Scenic Rim's units are the number of pedestals, Somerset units are the number of billing units. For non-shaded data all units are connections. Source: SKM (2011 & 2012).

The Authority accepts SKM's non-residential wastewater connections estimates.

Recycled Water

QUU provides recycled water to non-residential customers in Brisbane and Ipswich. QUU noted that, since 2008-09, the supply of recycled water in Brisbane grew by 19% (in 2009-10) and 14% (in 2010-11) to 6,615 ML.

However, with the easing of restrictions, QUU submitted that it did not expect the use of recycled water to increase.

SKM noted that QUU had indicated that it reduced the level of recycled water demand for Brisbane in 2012-13 in rounding off recycled water to the nearest 500ML. However, SKM noted that this rounding provision is greater than the quantity of recycled water provided to Ipswich (116ML). SKM considered it would be preferable to retain the demand for recycled water at the current consumption of 6,615ML for Brisbane.

Table 1.23: Recommended Recycled Water Demand (ML)

	2011-12 Review	***2012-13 Review***			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*CAGR 2012-15*
Total Recommended	6,731	6,731	6,731	6,731	0%
QUU Proposed	6,731	6,616	6,616	6,616	0%
Difference		**115**	**115**	**115**	

Note: 2011-12 shaded data reflects forecasts for 2011-12 from its 2011 Submission. This data is provided for comparison purposes only. Source: QUU (2011 & 2012), SKM (2012).

The Authority accepts SKM's recycled water demand estimates.

Non-revenue Water

Non-revenue water is the difference between bulk water supplied by the SEQ WGM and billable consumption from residential and non-residential customers. Non-revenue water includes network leakage, water theft and authorised unbilled water consumption (e.g. fire fighting and pipe flushing). QUU noted a range of approaches are adopted to minimise non-revenue water but estimates are subject to uncertainty.

SKM noted that the leakage component of non-revenue water is loosely related to the number of connections, assuming that water pressure remains the same. However, there are no clear drivers of the other components of non-revenue water.

SKM noted that connections (both residential and non-residential) are expected to grow at about 1.6% per annum and consequently SKM would expect leakage to grow at approximately the same rate. SKM noted that QUU's approach to estimate non-revenue water demand is based on historical estimate of non-revenue water as a percentage of bulk water demand. The percentage varies across each council district and QUU submitted that the percentages are as shown in Table 1.24.

QUU noted that the non-revenue water percentage for Brisbane has slightly increased due to more reliable data now available. With regard to Ipswich, QUU noted that it does not control the bulk metering into Ipswich, this is controlled by the SEQ WGM. In terms of bulk supply to Brisbane, QUU calculates Brisbane's bulk supply as the total bulk supply to QUU net of the bulk supply to Ipswich, Logan and Moreton Bay – as there is no bulk meter for Brisbane.

Table 1.24: QUU's Proposed Non-revenue Water Percentages and Levels

	% of bulk supply	*2010-11*	*2011-12**	*2012-13*	*2013-14*	*2014-15*
Brisbane	12.5%	15,185	13,923	13,720	14,092	14,469
Ipswich	6%	949	905	959	1,009	1,063
Lockyer Valley	15%	619	226	325	339	355
Scenic Rim	15%	339	197	210	225	240
Somerset	15%	153	218	228	237	247
QUU		**17,245**	**15,469**	**15,442**	**15,902**	**16,375**

*Note: * Estimated actual. Source: QUU (2012)*

SKM noted that between 2011-12 and 2014-15, QUU has forecast non-revenue water to grow at 1.9% per annum which is higher than the growth in connections.

As a percentage of total QUU bulk water demand, the peak in 2010-11 accounted for over 14% of total water demand by QUU. This fell to 12% in 2011-12 and is expected to fall further to 11.8% for the remaining years until 2014-15. SKM acknowledged the uncertainty in these forward estimates. Nevertheless, for the projected forecast period, while the estimated growth appears high, 11.8% of total water consumption is not unreasonable and SKM accepted this ratio of non-revenue water to total demand. Due to differences in the water consumption forecasts, SKM's recommendation differs to that proposed by QUU.

While the Authority has accepted SKM's revised estimate, the Authority notes that reductions in avoidable non-revenue water (such as leakage) are a source of potential efficiencies for the entities. The cost-effectiveness of pursuing reductions in non-revenue water improves as the bulk water price increases.

Table 1.25: Recommended Non-revenue Water (ML)

	2011-12 Review	***2012-13 Review***			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Brisbane	na	13,759	14,214	14,691	3.3%
Ipswich	na	958	1,014	1,075	5.9%
Lockyer Valley	na	324	336	350	15.6%
Scenic Rim	na	209	221	235	6.1%
Somerset	na	224	231	238	2.9%
Total Recommended	**13,346**	15,474	16,018	16,588	3.7%
QUU Proposed	13,642	15,442	15,902	16,375	1.9%
Difference	**-296**	**32**	**116**	**213**	**1.8%**

Note: 2011-12 shaded data reflects forecasts for 2011-12 in QUU's 2011-12 submission. This data is provided for comparison purposes only. Source: QUU (2011 & 2012), SKM (2011 & 2012).

The Authority accepts SKM's non-revenue water estimates.

Bulk Water

QUU's forecasts of bulk water are the total of residential, non-residential and non-revenue water (see below).

Table 1.26: QUU Bulk Water Volumes (ML)

	2011-12 Submission	***2012-13 Submission***				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Brisbane	102,709	107,098	109,761	112,737	115,755	2.6%
Ipswich	15,168	15,085	15,988	16,809	17,719	5.5%
Lockyer Valley	1,682	1,509	2,164	2,261	2,368	16.2%
Scenic Rim	1,366	1,311	1,402	1,498	1,599	6.8%
Somerset	1,373	1,454	1,519	1,582	1,649	4.3%
QUU total	**122,298**	**126,456**	**130,834**	**134,887**	**139,089**	**3.2%**

*Note: 2011-12 shaded data reflects QUU's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. * Estimated Actual. SKM noted that the unusually high demand is due to the plans for a large water user locating a plant(s) that is expected to consume about 0.5 GL p.a. in the Lockyer Valley. Source: QUU (2011 & 2012) data template, SKM (2011 & 2012).*

SKM revised QUU's estimates of bulk water (see below) demand based on its view of residential, non-residential and non-revenue water (as noted previously). SKM recommended higher bulk water demand estimates than QUU.

Table 1.27: Recommended Bulk Water Volumes (ML)

	2011-12 Review	***2012-13 Review***			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Brisbane	103,376	110,069	113,716	117,525	3.3%
Ipswich	15,114	15,969	16,906	17,914	5.9%
Lockyer Valley	1,610	2,160	2,242	2,331	15.6%
Scenic Rim	1,303	1,392	1,476	1,564	6.1%
Somerset	1,304	1,497	1,540	1,586	2.9%
Total Recommended	**122,708**	131,087	135,881	140,920	3.8%
QUU Proposed	**122,298**	**130,834**	**134,887**	**139,090**	**3.2%**
Difference	**410**	**253**	**994**	**1,830**	**0.6%**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. Source: QUU (2011 & 2012) data template, SKM (2011 & 2012).

The Authority notes that the WGM released its Operating Strategy in May 2012, which contained its estimate of QUU's bulk water demand for 2012-13. These demand estimates

were required to be used by the Authority in its review of SEQ Grid Service Charges for 2012-13.

As a cross-check on SKM's estimates, the Authority has contrasted the available estimates of QUU's demand for bulk water in 2012-13 in the table below. QUU's recent estimate is 4.0% higher than the WGM's May 2012 estimate. The SKM estimate is 4.2% higher than the WGM's.

The Authority accepts SKM's bulk water estimate, which forms the most relevant estimate for the purposes of price monitoring and is internally consistent with the proposed adjustments to residential, non-residential and non-revenue water.

Table 1.28: QUU Bulk Water Volumes (ML) 2012-13

	QUU 2011-12 Information Return	*QUU 2012-13 Information Return*	*WGM*	*SKM*
Brisbane	104,560	109,761	105,490	110,069
Ipswich	15,653	15,988	15,653	15,969
Lockyer Valley	1,739	2,164	1,792	2,160
Scenic Rim	1,391	1,402	1,390	1,392
Somerset	1,396	1,519	1,463	1,497
QUU total	**124,738**	**130,834**	**125,788**	**131,087**

Source: QUU (2011) data template, QUU (2012) data template, WGM (2012) and SKM (2012).

The Authority accepts SKM's bulk water estimates.

Demand for Capital Planning

QUU's Submission

Demand Forecasting Procedure

QUU provided further information on its demand forecasting procedure for capital planning purposes as part of its master planning process. In summary, this procedure involves the aggregation of estimates produced for each council area, resulting from:

(a) the use of base population data sourced from each council, which is drawn from each council's population and planning models; and

(b) testing, analyses and cleansing of the data by QUU, with manual adjustments if appropriate. The adjustments vary for each council area depending on the availability of data and changes or revisions to council modelling.

QUU also stated that due to the rolling five-year schedule of QUU's master plans, when the feasibilities team comes to develop the feasibility study for a capital project, the relevant master plan may no longer reflect actual development within a particular council area. The feasibilities team therefore reviews and updates these demand forecasts to account for more recent developments.

QUU stated that where differences exist in the demand forecasts underpinning the master plan and those based on more recent development, the higher estimate is used, as this is deemed to be more conservative and ensures the business is able to maintain supply continuity and service standards. Further, QUU submitted that this approach reduces the likelihood of having to replace/upgrade infrastructure where demand is greater than expected, particularly where the typical asset life for water and wastewater assets can range from 80 to 100 years.

QUU's Demand Estimates and Parameters

QUU provided a set of its long-term demand forecasts used to forecast future capital investment in infrastructure servicing new and infill development areas. Unlike its short term forecasts for pricing purposes (based on low series population), QUU used the OESR medium population series over the medium and long term (2017-31). The population figures are converted into EPs based on developable land area consistent with council plans.

QUU disaggregated OESR's population projections into different supply zones within its network using council land use planning information. QUU further disaggregated the residential sector into four different dwelling densities, namely low [density] residential, high [and medium density] residential, rural residential and restricted supply sectors. QUU also estimated non-residential demand using Council's forecasts of land use. Non-residential land uses are converted into EPs and residential demand peaking factors are applied.

QUU multiplied the EP estimates by an average demand per EP to generate estimates of average demand. The average demand per EP is 230 l/p/d for low [density] residential and restricted supply customers, 165 l/p/d for high [and medium density] residential customers and 300 l/p/d for rural residential customers.

Authority's Analysis

Demand Forecasting Procedure

In its Final Report for 2011-12, the Authority reviewed the need for consistency between demand forecasts for capital planning and for pricing purposes. The Authority concluded that these forecasts are broadly consistent for QUU although there are some legitimate differences as longer term demand for capital planning purposes seeks to achieve service standards and regulatory requirements over the life of assets and account for risk. Short-term demand estimates are used for pricing, operating expenditure and in feasibility and prioritisation of capital expenditure. Short-term demand can depart from long-term trends.

SKM cautioned against scaling capital expenditure to reflect short-term demand, as short-term consumption patterns can change more quickly than the ability to augment. Further, variances in short-term demand can be accommodated in the review of the timing of works.

The Authority considers that this approach remains relevant in 2012-13. The Authority further notes that the entities are currently consolidating the long-term capital planning parameters in the SEQ Water Supply and Sewerage Design and Construction Code. The Code is due to be finalised by mid-2013.

The Authority notes that QUU's long term demand forecasting procedure appears to involve a large degree of manual handling and manipulation of council data. There may be opportunities to streamline this process including automation of some of these steps.

Further, the Authority notes that QUU adopts a highly risk averse approach in adopting the highest available demand estimate in reviewing the feasibility of capital projects. The Authority has a concern that this aspect of QUU's procedure results in a systematic upward

bias to estimates of demand. If so, this would result in earlier construction and/or higher capacity assets than required, and higher capital expenditure costs than prudent and efficient.

The Authority considers that QUU should be using the most robust and appropriate demand estimates in its feasibilities studies in order to demonstrate the prudency of projects. Using the most robust and appropriate demand estimates instead of the highest estimate, is a source of potential efficiencies that can be drawn on to achieve the generic saving target discussed further below. Unfortunately, on the basis of available information, the Authority is unable to estimate the magnitude of the bias.

Demand Estimates and Parameters

SKM reviewed QUU's demand estimates and parameters. SKM stated that the standard approach used by water utilities around Australia to estimate the infrastructure required to serve future communities is the application of a series of peaking factors on average consumption. This approach is supported in the Water Supply and Sewerage Codes of Australia published by the WSAA.

SKM stated that key design parameters utilised in the SEQ are: mean day maximum month (MDMM); peak day (PD); and peak hour (PH). These factors were discussed in further detail in the Authority's 2011-12 Final Report.

SKM stated that identical peaking factors are utilised for all residential customer types, with the exception of restricted supply customers which have lower peaking factors for peak day and peak hour demands. SKM recommended that the average demand factors applied for different types of residential customers are reasonable.

However, SKM noted that many water utilities across Australia have different peaking factors for different types of residential and non-residential development. SKM recommended that QUU recognise the diversity of peaking factors in the residential and non-residential sectors.

SKM considered the application of different peaking factors in both sectors to allow improved design of infrastructure, particularly in areas where urban renewal may result in a significant mix of commercial and high density properties that are atypical of new suburb development areas. In the non-residential sector, SKM suggested that QUU include separate classification of customers such as: commercial/public; industrial; and tourist. SKM considered these modifications would produce more efficient capital expenditure estimates.

In response to SKM, QUU noted that whilst it is not very clear in the Network Planning Guidelines 2011, the peaking factors given in the guidelines are only intended to provide high level guidance, and actual peaking factors used should reflect the characteristics of the water supply area being planned. QUU provided an example of the actual peaking factors from a master plan for a water supply area where the peaking factors differed for three residential types and separate ratios applied for minor non-residential development. Individual demand patterns were used for major users based on actual data.

Further, QUU considered that having one minor non-residential category is sufficient given that major users are assessed individually. This is reflected in the draft SEQ Design and Construction Code which includes a single category of commercial/industrial. QUU considered that the tourist category is not significant enough to be relevant in the QUU service area.

The Authority has accepted QUU's response.

Summary

As noted in the Authority's first price monitoring report in 2010-11, demand estimates are an essential component of price setting. The more reliable the demand estimates, the more informed will be the choices businesses can make about expenditure and prices. It is therefore important that demand forecasts represent the best possible assessment of future consumption given the available information.

The Authority acknowledges that structural change in the SEQ water sector has led to a number of legacy issues, particularly regarding the transfer and robustness of historical data from the councils. Given available information, the Authority's consultants considered the methodology adopted to forecast demand is generally reasonable at this stage for 2012-13.

However, the Authority has adjusted QUU's residential and non-residential demand for water and wastewater to reflect minor revisions for the method of interpolation, average residential use (l/p/d) and recycled water estimates. Nonetheless, the Authority notes that the (revised) estimates broadly confirm QUU's estimates for 2012-13.

The Authority considers that QUU should be using the most robust and appropriate demand estimates in its feasibilities studies in order to demonstrate the prudency of projects. That is, the higher of the available growth estimate should not be automatically adopted.

Going forward, explicit inclusion of price elasticity for water should be incorporated in demand forecasting once the estimated level of rebound is achieved. It would seem appropriate to develop and compare different approaches to demand forecasting for future use in SEQ.

1.6 The Initial Regulatory Asset Base

In March 2010, the Minister for Natural Resources, Mines and Energy and Minister for Trade advised the Authority of the initial regulatory asset base (RAB) as at 1 July 2008 for interim price monitoring. The Minister advised the RABs for each entity as well as the RABs for each participating council, and other adjustments. For QUU, the Minister also advised the RAB for the Esk Gatton Laidley Water Board.

QUU's Submission

QUU allocated the advised RAB of $3.94 billion as required on a regional basis (see Table 1.29).

The Authority notes that QUU's submitted asset values as at 1 July 2008 are the same as in QUU's 2011-12 submission, which reflected the finalised transfer agreements between QUU and its participating councils.

Table 1.29: QUU RAB as at 1 July 2008 ($m)

	Previously Approved Water	*Previously Approved Wastewater*	*Previously Approved RAB*	*Water*	*Wastewater*	*RAB*
Brisbane City Council	1,333.25	2,083.60	3,416.84	1,333.25	2,083.60	3,416.84
Ipswich City Council	164.43	264.39	428.82	164.43	264.39	428.82
Lockyer Valley Regional Council	24.57	7.71	32.28	24.57	7.71	32.28
Scenic Rim Regional Council	20.55	16.86	37.41	20.55	16.86	37.41
Somerset Regional Council	17.52	12.18	29.70	17.52	12.18	29.70
QUU	**1,560.33**	**2,384.72**	**3,945.05**	**1,560.33**	**2,384.72**	**3,945.05**

Note: Shaded data reflects the Authority's accepted RAB as published in its SEQ Price Monitoring Report for 2011-12. This data is provided for comparison purposes only. Source: QUU (2012).

Authority's Analysis

The Authority has reviewed the allocation of the initial RAB by QUU and confirmed that it is the same as that previously accepted by the Authority in its 2011-12 review. The allocation of the RAB value accurately reflects the value of assets transferred to QUU from its participant councils.

The Authority accepts QUU's apportionment of the Minister's advised RAB.

1.7 Capital Expenditure

1.7.1 Capital Expenditure from 1 July 2008 to 30 June 2010

The Ministerial Direction requires the Authority to accept as prudent and efficient:

(a) actual capital expenditure for water and waste water (excluding establishment costs) as included in councils' financial accounts from 1 July 2008 to 30 June 2010;

(b) allowable establishment costs as advised by the Minister for Natural Resources, Mines and Energy and Minister for Trade; and

(c) contributed, donated and gifted assets and capital expenditure funded through cash contributions from 1 July 2008 to 30 June 2010.

QUU's Submission

In its submission, QUU included capital expenditure for 2008-09 of $182.5 million and $242.4 million in 2009-10 (inclusive of contributed, donated and gifted assets). QUU also included establishment costs of $39.1 million as at 30 June 2010, in accordance with the Minister's approved value as advised in February 2011, comprised of $27.5 million of directly incurred costs and $11.5 million related to Council of Mayors SEQ costs.

Authority's Analysis

The Authority notes that QUU's capital expenditure values for 2009-09 and 2009-10 are the same as those approved by the Authority in its 2011-12 Final Report. In that report, the Authority noted it had reconciled this expenditure against councils' financial accounts.

The Authority has therefore accepted QUU's capital expenditure for 2008-09 and 2009-10.

Table 1.30: Capital Expenditure 2008-09 and 2009-10 ($m)*

	2008-09	*2009-10*	*2008-09*	*2009-10*
Brisbane City Council	126.61	147.26	126.61	147.26
Ipswich City Council	45.92	47.62	45.92	47.62
Scenic Rim Regional Council	3.08	3.38	3.08	3.38
Somerset Regional Council	2.55	3.49	2.55	3.49
Lockyer Valley Regional Council	4.35	1.52	4.35	1.52
Establishment costs	-	39.12	-	39.12
QUU	182.50	242.38	182.50	242.38

*Note: Shaded data reflects the Authority's previously accepted capital expenditure in its SEQ Price Monitoring Report for 2010-11. This data is provided for comparison purposes only. *Note: includes contributed, donated and gifted assets. Source: QUU (2011).*

The Authority has accepted QUU's capital expenditure in 2008-09 and 2009-10 and the establishment costs approved by the Minister.

1.7.2 Capital Expenditure from 1 July 2010

The Ministerial Direction requires the Authority to review the prudency and efficiency of capital expenditure for inclusion in the RAB from 1 July 2010. Only expenditure found to be both prudent and efficient can be included in the RAB.

The criteria and processes for determining the prudency and efficiency of capital expenditure are defined in the Information Requirements for 2012-13.

In summary, to establish prudency, an entity must demonstrate that there is a need for the expenditure, typically by reference to an analysis of its driver/s. To establish efficiency, information is required on the scope and standard of the works and the corresponding cost and timing of works. This should be linked, where relevant, to the underlying cost components such as unit rates, on-costs and contingencies and supporting materials such as consultant reports. Information is also required on expenditure approval policies and procedures.

The Authority requires capital expenditure from 1 July 2010 to be included in the RAB only when it is commissioned, and contributes productive capacity to the system.

QUU's Submission

QUU proposed capital expenditure of $1,696 million over five years (including contributed assets), of which water accounts for $425 million and wastewater $1,271 million. QUU provided its capital expenditure on a commissioned basis, consistent with its approach in its 2011-12 submission.

For 2012-13, capital expenditure of $354.24 million reflects an increase of $137.91 million or 64% on 2011-12 capital expenditure of $216.22 million. QUU submitted that the noticeable increase in the value of commissioned projects in 2012-13 results from the scheduled commissioning of a number of large capital value, multi-year projects.

Proposed Capital Expenditure

QUU assigned its capital works expenditure to the following cost drivers – growth, renewal, improvement, compliance and contributed assets (Table 1.31).

Table 1.31: QUU Forecast Capital Expenditure Water and Wastewater ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
Growth	4.68	32.39	103.38	274.75	202.15	617.36
Renewal	83.74	104.59	142.63	142.67	146.03	619.66
Improvement	9.26	14.10	39.85	33.80	35.57	132.58
Compliance	4.57	12.28	12.78	4.76	4.40	38.79
Contributed Assets	55.50	52.86	55.60	60.39	63.19	287.55
Total	**157.74**	**216.22**	**354.24**	**516.38**	**451.35**	**1,695.94**
Comprising						
Water	60.18	79.00	104.21	92.07	89.91	425.38
Wastewater	97.56	137.22	250.03	424.31	361.44	1,270.56

Note: Capital expenditure is presented here on an 'as commissioned' basis as per QUU's submission. Source: QUU (2012) data template.

The water and wastewater costs for each of QUU's five geographic areas are detailed below.

Table 1.32: QUU Capex for Water by Geographic Area ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
Brisbane	43.22	56.72	67.81	61.84	63.75	**293.34**
Ipswich	14.92	15.13	21.69	18.40	20.01	**90.15**
Lockyer Valley	0.89	2.09	5.34	2.70	2.32	**13.35**
Scenic Rim	1.04	3.50	5.83	6.31	2.08	**18.76**
Somerset	0.11	1.56	3.53	2.83	1.76	**9.79**
Total	**60.18**	**79.00**	**104.21**	**92.07**	**89.91**	**425.38**

Note: Capital expenditure as commissioned and includes contributed assets. Source: QUU (2012) data template.

Table 1.33: QUU Capex for Wastewater by Geographic Area ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
Brisbane	72.65	101.69	189.11	148.89	256.63	**768.97**
Ipswich	23.03	18.79	47.31	250.86	20.68	**360.67**
Lockyer Valley	0.26	2.45	5.78	6.16	5.81	**20.46**
Scenic Rim	0.40	11.56	4.35	15.90	1.70	**33.91**
Somerset	1.22	2.74	3.47	2.49	76.62	**86.56**
Total	**97.56**	**137.22**	**250.03**	**424.31**	**361.44**	**1270.56**

Note: Capital expenditure as commissioned and includes contributed assets. Source: QUU (2012) data template.

Changes to Capital Expenditure Estimates

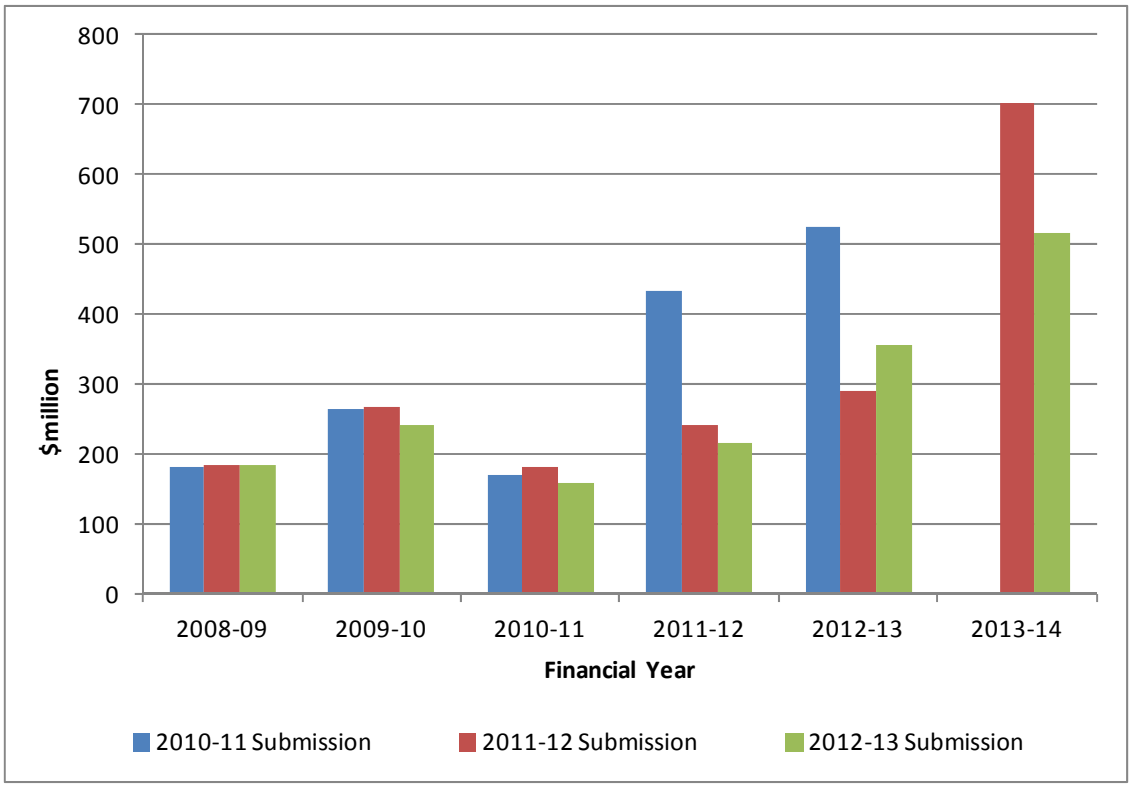
QUU also sought to identify and explain the variation between its forward program and that previously proposed in its 2011-12 submission (see below).

Table 1.34: QUU Capital Expenditure 2010-11, 2011-12 and 2012-13 Submission ($m)

Forecasts	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*Total*
2010-11 Submission (a)	169.50	432.50	524.30	na	**na**
2011-12 Submission (b)	182.05	240.10	291.13	703.11	**1,416.39**
2012-13 Submission (c)	157.74	216.22	354.24	516.38	**1,244.58**
Variance (c) – (b)	**-24.31**	**-23.88**	**63.11**	**-186.73**	**-171.81**

Note: Capital expenditure as commissioned and includes contributed assets. Source: QUU (2012),QCA (2012).

Chart 1.5: QUU Capital Expenditure Estimates in Submissions ($m)



Note: Capital expenditure as commissioned. Source: QUU (2010), QUU (2011), QUU (2012)

QUU outlined the reasons for the key changes in capital expenditure as commissioned for 2011-12. QUU did not provide a full reconciliation for 2012-13.

Various projects were delayed until 2012-13, causing a downwards revision of the 2011-12 capital expenditure estimate. QUU identified the main causes of a downwards variation in forecast 2011-12 capital expenditure as commissioned of $23.88 million as:

(a) Auchenflower Branch Sewer Upgrade - $9 million reduction as the completion of the project has been delayed by six months in part due to the requirement for rectification of some cracked pipes on the new pipeline and delay in procurement of the contract for relining works on the existing pipeline;

(b) ICT programs - $6.2 million reduction in the ICT programs mainly due to the ERP solution changing from implementation of new system to a 'lift and shift' solution. As a consequence, the amount to be capitalised has been reduced;

(c) Toowong Sewer Upgrade - $5.4 million reduction as this project was delayed due to slow construction as a result of unexpected soil/rock and micro tunnelling break down; and

(d) Gibson Island WRP – Sludge Dewatering Enhancements - $3.9 million reduction as delays in procurement and design have extended the overall completion date.

The above have been offset due to delayed commissioning from 2010-11 including:

(a) recovery of flood damaged assets - $8.2 million;

(b) Fairfield STP Upgrade - $6 million;

(c) Cubberla Creek Main Sewer Upgrade - $4.7 million; and

(d) Gowan Road Pump Station Rising Main Replacement - $3.1 million.

Service Standards

QUU submitted that its level of capital investment is directly related to the service standards it provides to its customers. QUU provided details of its service standards including its legislative obligations, with key achievements being:

(a) progress to achieving a netserv plan by 1 July 2013. This plan is required to provide an overview of QUU infrastructure planning and development over a 20-year timeframe. QUU noted its draft netserv plan is being prepared in two parts. Part A broadly deals with strategies, infrastructure, planning, standards, connections and charging, while Part B covers operational and technical plans. Part A was approved by the QUU Board in October 2011 and endorsed by the Participating Councils. Part B was approved by the Board in November 2011; and

(b) alignment of customer service standards. QUU submitted that it inherited a range of customer service standards from its participant councils. As part of QUU's planning and integration, a revised set of customer standards was prepared in late 2010. QUU noted that these customer service standards are equal or better than those previously implemented by participant councils.

QUU reports performance against its customer service standards in its Annual Report. QUU also noted that it set up a Customer and Community Reference Group (CCRG) in November 2010. The CCRG assists by providing feedback on a range of issues, including service standards and financial hardship policy.

Capital Planning

QUU submitted that it takes a multi-level approach to capital planning, including:

(a) strategic planning – developing the overall high-level strategy applying to the entire service area, a holistic approach to planning that looks for opportunities to improve system configuration;

(b) master planning – strategy development and investigation of individual supply area schemes in accordance with the broader strategic plan. It identifies the need for timing and costs of the new infrastructure required to provide adequate system capacity to maintain service standards under projected growth in demand;

(c) integrated water management planning – an extension of the traditional strategic and master planning process taking a broader view of managing the urban water cycle. It considers the linkages between the water supply, sewerage and stormwater systems and examines alternative servicing strategies that provide more efficient use of resources and reduced impacts on the environment through, for example, demand management, rainwater harvesting and smart sewer technologies;

(d) local government priority infrastructure planning – the development of infrastructure plans by local governments in conjunction with QUU assists in planning infrastructure in a coordinated, efficient and orderly way that encourages urban growth in areas where adequate infrastructure exists or can be efficiently provided;

(e) capital investment plans – QUU uses the outcomes of the master planning and asset management process in the development of a 30-year capital investment plan, which

details the proposed investment in infrastructure on a year-by year basis. A five-year 'slice' of the 30-year capital investment plan is taken forward for detailed budget deliberations on an annual basis;

(f) feasibility planning – involves a high level review of the planning assumptions adopted at the master planning stage. Detailed feasibility planning further investigates the infrastructure identified in master plans for construction in the next three to five years. More detailed option analyses and cost estimates are developed. QUU uses standard templates for the cost estimates at the feasibility stage of planning. These contain standard approaches for estimating contingency, preliminaries, design, and project and contract management costs;

(g) annual prioritisation – of the works outlined in the capital investment plan to ensure that funds are direct to the highest priority works. A capital prioritisation model is used through which the risks associated with non-funding of individual line items are calculated and the associated potential adverse impacts identified; and

(h) independent review – for major expenditure, QUU attempts to ensure each project is subject to a suitable amount of planning rigour, by commissioning independent reviews of these projects by a third party. These reviews evaluate projects on a range of criteria, including design standards, growth projections, project justification, project deliverability, and cost. No external review of major capital projects was conducted this year due to most of the 2012-13 major projects being commenced in earlier periods.

QUU has implemented a gateway review process for major projects. The aim of this process is to provide independent support to projects by having peers examine them at critical moments in their lifecycle.

Authority's Analysis

Adequacy of Capital Expenditure Data

Halcrow considered that QUU had supplied sufficient supporting information to enable the assessment of the prudency and efficiency for a sample of capital expenditure of selected projects.

QUU has indexed capital costs by applying the Construction Forecasting Council Engineering Construction Price Index for Australia. A September 2011 forecast was used for 2012-13 of 0.96%. An April 2012 update was used for the two forward years of 2013-14 (0.89%) and 2014-15 (2.49%).

As noted in the Authority's price monitoring report for 2010-11, there is a range of options for the indexing of asset values. Industry input indices should provide a more accurate estimate but may be subject to step changes over short periods, and would be expected to rise and fall with market conditions.

In the Authority's Seqwater Irrigation Draft Report (QCA 2012), the Authority compared the proposed index of 4% for direct materials costs for the regulatory period (2013-17) against a range of construction cost escalation factor estimates from 4.1% to 5.1% calculated using historical data over a 10-year period.

QUU's use of an annual engineering construction price index includes data from seven construction types (including road, bridge, electricity and pipeline, water and sewerage, telecommunications and mining) and eight states and territories. The Authority notes that

QUU's index may therefore be affected by market conditions in the types of construction and geographic areas that are not directly relevant to QUU's water and sewerage business.

Nonetheless, given available benchmarks, the Authority considers the quantum of QUU's indexation for 2012-13 of 0.96% to be conservative and any variations subsequently found between forecast and actual can be taken into account in future reviews.

The Authority notes that QUU has identified the variance in capital expenditure forecasts to its previous estimates. Estimated expenditure in 2011-12 is much lower than originally forecast in QUU's 2010-11 submission, and lower than budgeted in 2011-12. Halcrow noted that expenditure and/or project deferral generally resulted in a reduction of expenditure in the planned year, with expenditure still being required in the following years.

Expenditure for 2012-13 has been significantly increased (by $63 million or 21.7%) above that forecast by QUU in 2011-12.

Service Standards

The Authority did not review service standards as part of this price monitoring review. The Authority accepted the service standards provided by the entities so long as they were approved by other relevant agencies.

Where service standards are the driver for capital expenditure, Halcrow reviewed this against the standards provided by QUU to assess the prudency and efficiency of the works.

The Authority supports the development of specific and measurable service standards and notes that this is a first step in the development of a more integrated performance monitoring framework (QCA 2010).

Capital Planning

The Authority in its Final Report on SEQ Price Monitoring for 2010-11 noted that it supported initiatives within the entities to develop their internal processes to the planning and implementation of capital expenditure to allow for:

(a) the consideration of prudency and efficiency of capital expenditure from a regional (whole of entity) perspective;

(b) only commissioned capital expenditure to be included in the RAB and therefore prices;

(c) a standardised approach to cost estimating, including a standardised approach to estimates for items such as contingency, preliminary and general items, design fees and contractor margins, so that there is uniformity of cost estimating across all proposed major projects;

(d) a summary document to be prepared for identified major projects so as to facilitate standardised reporting;

(e) an implementation strategy to be developed for each major project that includes recommendation on delivery methodology, program and a risk review process; and

(f) a 'toll gate' or 'gateway' review process to be implemented so that appropriate reviews are undertaken at milestone stages for selected projects.

The Authority has previously found that there has been progress in QUU's implementation of these initiatives. In this year's review, Halcrow found a number of issues which were evident from its review of sampled projects (see further below) which the Authority will continue to track in its price monitoring reviews.

In 2011-12, the SEQ entities were part of the WSAA asset management benchmarking, the purpose being to benchmark asset management performance and identify performance improvement opportunities for participating utilities in the water industry. The improvements recommended for QUU include:

(a) strategic asset management framework – there is a need for an explicit framework to describe holistic asset management for the whole organisation. The framework needs to explain the linkages between functions and plans of the various groups within the organisation. The objective would be to break down the barriers between groups and to inform each about the relationship and dependency upon one another;

(b) relationship between asset performance, cost, level of service and price - there is a need to develop a clear position and understanding about asset operation and cost, the level of service provided and/or demand and the price customers pay. The objective is to develop the value concept established to date by QUU to enable the organisation to defend its position on investment to stakeholders;

(c) key performance indicators (KPI) and reporting - there is a need to ensure that the KPI framework and reporting reflects the organisation's strategic objectives and drives business outcomes. The objective is to establish a hierarchy of KPIs that translate corporate aspirations in to tangible measures related to asset performance and cost. At present KPIs appear to be based around asset failure not performance;

(d) post activity review – asset acquisition, operational and contract performance information should be gathered to facilitate post project/activity appraisals. Consistently low scores were noted in many process areas wherever there was reference to post-activity review, for example project design reviews, post-project delivery review, asset operation review and improvement, operating procedures documentation review and revision. This recurring theme indicates that important lessons for those with asset responsibilities are not being considered and fed back into the asset acquisition process.

The Authority supports the recommendations of the WSAA review and will monitor QUU's progress in implementing these recommendations.

Prudency and Efficiency

For capital expenditure to be included in the RAB, it must be prudent (there is a demonstrated need for the expenditure) and efficient (it is cost-effective in its scope and standard, using market benchmarks).

As previously noted, in assessing the prudency of the sampled projects, the Authority's consultants have assessed each project individually against planning documents. The nature of the cost driver and reasonableness of the decision-making process were considered in determining the need for a project. Where growth is a driver, underlying estimates of growth are compared to the shorter term estimates used for pricing purposes, to determine whether the timing of the project could be deferred and savings made. As previously noted, the Authority's consultants did not adjust the scope of QUU's capital expenditure projects for adjustments to QUU's short-term demand forecasts.

In assessing the efficiency of the sampled projects, the Authority's consultants have reviewed the scope and standard of each project and its cost and timing. In particular, the consultants have reviewed the cost estimates against available benchmarks and reviewed the cost estimation process adopted. Where a competitive tender approach was adopted and the cost therefore reflects market rates, these have been accepted as efficient.

The sample chosen for review of prudency and efficiency included the 10 largest projects (not previously reviewed) to be commissioned in 2012-13. The Authority focussed on projects commissioned in 2012-13 given their impact on the 2012-13 MAR. For QUU, this resulted in a sample of projects for review which accounted for 18% of QUU's total commissioned capital expenditure program in 2012-13 (excluding contributed assets[12]).

The list of capital expenditure programs reviewed in detail for 2012-13 is shown in Table 1.35. Halcrow reviewed the capital expenditure on an 'as incurred' basis, as this reveals the annual expenditure stream over the life of the project.

Table 1.35: Capital Expenditure Programs Reviewed ($m)

Project	*Activity*	*Commissioned in 2012-13*	*As Incurred in 2012-13*
1. Brisbane Sewer Rising Mains	Wastewater	7.21	7.21
2. Brisbane Oxley Creek WRP – Primary Digesters Environmental Improvements	Wastewater	6.72	3.49
3. Ipswich Deebing Creek Sewer Trunk Main Augmentation – Stage 1	Wastewater	6.29	1.00
4. Ipswich Rosewood WRP Upgrade – Stage 2	Wastewater	5.77	3.66
5. Brisbane Water Meters Renewals Program	Water	5.60	5.60
6. Brisbane Gibson Island WRP - Sludge Dewatering Enhancement	Wastewater	5.00	2.97
7. Brisbane Water Reservoirs Renewals Program	Water	4.65	4.65
8. Brisbane Water Reclamation Plant Renewals Program	Water	4.40	4.40
9. Brisbane Sewer Pump Station Reliability Improvement Program	Wastewater	4.19	4.19
10. Brisbane Sewer Pump Stations Renewals Program	Wastewater	4.11	4.11
Total Sampled Expenditure		53.99	41.28
Total Capital Expenditure (excl. contributed assets)		298.64	291.52

Total capital expenditure excludes contributed assets of $55.6 million in 2012-13. Table may not add due to rounding. Source: QUU (2012) supporting information.

[12] Contributed assets were excluded from the sample of projects for detailed review as a detailed list of contributed assets was not provided and they typically reflect small value local network infrastructure.

Brisbane Sewer Rising Mains

The sewer rising main renewals program is a rolling program of 'minor' projects undertaken to ensure that sewer rising mains are replaced or rehabilitated when the useful life of the asset is reached; or to address safety, maintainability, operability, obsolescence, environmental and/or financial drivers. As such, the program is driven by both condition and performance.

The program is separated between two asset classes, including:

(a) 'run to fail' assets - rising mains with a diameter ≤ 300mm; and

(b) 'avoid fail' assets - rising mains with a diameter > 300mm.

For 2012-13, QUU proposed to deliver six separate schemes, three on 'run to fail' assets and three on 'avoid fail' assets. The capital expenditure proposed is $7.218 million in 2012-13.

Table 1.36: Brisbane Sewer Rising Mains Renewals Program

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	0.245	0.970	7.218	3.282	9.078	20.793

Note: Capital expenditure on an as incurred basis. Source: Halcrow (2012).

Prudency

Halcrow noted that for the 'run to fail' schemes, the primary driver for investment is the need to implement mitigation measures and environmental monitoring in accordance with the DERM licence/development permit. For the 'avoid fail' assets, structural condition of the asset and ongoing serviceability, assessed through visual inspection and ultrasonic thickness (UT) testing, is the key driver for investment on these assets.

Based on the recorded failure history of the proposed 'run to fail' schemes and reducing pipe thickness of the rising mains included in the 'avoid fail' schemes, Halcrow considered that the projects identified for implementation under the proposed Brisbane Sewer Rising Main Renewals Program to be both necessary and prudent.

Halcrow noted that QUU had adopted a sensible approach to program development, whereby a large number of different options have been considered for the 'avoid fail' schemes as part of the feasibility process. In addition, project phasing (where relevant) was also considered appropriate by Halcrow.

Efficiency

Halcrow noted that whilst the cost estimates used to derive the scheme were detailed and relatively accurate for feasibility purposes, the overall contingency allowance used by QUU was quite high, and as a result, efficiencies may be achieved during the procurement and delivery of the program.

Halcrow noted that QUU had applied a variable percentage contingency adjustment to each of the six schemes, ranging from 23% to 40%. Halcrow stated that whilst it is usual practice to factor in contingencies within project estimates, and the uncertainty of scope for the two 'avoid fail' schemes supported the need for some contingency, Halcrow considered the assumed contingency allowance ($1.05 million for 2012-13) to be overstated.

Halcrow considered that this particularly applied to the more straightforward 'run to fail' and RM10 schemes, where the proposed scope is reasonably well defined and forecast to be delivered using established techniques. Halcrow stated that as the projects within this program are forecast to be predominantly delivered during the current year, there should already be a reasonable level of project definition, suggesting a contingency allowance of 10-15% would be more appropriate.

In recognition of these expected efficiencies, Halcrow recommended an adjustment to the 2012-13 expenditure forecast reflective of adjusting the contingency allowance to a maximum of 10% on the 'run to fail' schemes and 25% on the 'avoid fail' schemes (15% on RM10). On this basis, the forecast expenditure in 2012-13 should be reduced by $345,000.

Conclusion

In summary, Halcrow considered the Brisbane Sewer Rising Mains program to be prudent.

With regards to efficiency, Halcrow considered the overall contingency allowance to be quite high and as a result, efficiencies may be achieved during procurement and delivery of the program.

The Authority accepts Halcrow's recommendation that the contingency allowance be adjusted to a maximum of 10% on the 'run to fail' schemes and 25% on the 'avoid fail' schemes.

Table 1.37: Brisbane Sewer Rising Mains Renewals Program ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	0.245	0.970	7.218	3.282	9.078	20.793
QCA Adjustment			-0.345			-0.345
QCA Recommended	0.245	0.970	6.873	3.282	9.078	20.448

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Brisbane Oxley Creek WRP – Primary Digesters Environmental Improvements

This project involves upgrade of Digesters 3 and 4 at the Oxley Creek Wastewater Treatment Plant to accommodate current and forecast loading of up to a capacity of 67 megalitres per day. Plant capacity was previously enhanced by upgrading Digesters 1 and 2 in 2005-06. Given that the enhanced operation of these units provided adequate capacity, Digesters 3 and 4 were taken offline due to mechanical issues.

However, additional capacity is now required and upgrade of both Digesters 3 and 4 is proposed, with an allowance for one redundant digester in the event of failure. The proposed upgrades are to be reflective of the work previously undertaken in 2005 with respect to Digesters 1 and 2, where the adopted solution was subject to a detailed assessment of options (which also addressed Digester 3 and 4).

The capital expenditure proposed is $3.49 million in 2012-13.

Table 1.38: Brisbane Oxley Creek WRP – Primary Digesters Environmental Improvements ($m)

Project	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	0.18	2.753	3.490	0	0	6.42

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

The drivers for enhancement of Digesters 3 and 4 are to:

(a) reduce the risk of high consequence asset failure by introducing redundancy and stabilising biosolids to reduce odour;

(b) ensure mixing does not compromise digester performance;

(c) reduce the volume of biosolids produced from Oxley Creek WWTP;

(d) increase the potential for beneficial reuse of biosolids;

(e) maximise the potential for power cogeneration; and

(f) continue to meet the requirements of the SR2203 Environmental Authority (Licence) issued to Oxley Creek WWTP in relation to the release of noxious or offensive odours.

In relation to prudency, Halcrow considered that the development of a solution to improve the treatment efficiency of the Brisbane Oxley Creek WRP was reasonable and prudent.

Halcrow noted that the digesters were not well maintained prior to QUU operation. Given that Digesters 1 and 2 already operated on the CAMBI[13] process, Halcrow considered that enhancing the offline Digesters 3 and 4 with the same process was also considered prudent.

Efficiency

In relation to efficiency, Halcrow noted that it was a shortcoming of the addendum report that sufficient overhead costs were not appropriately allocated. Furthermore, it does not appear that information related to actual costs incurred in developing the original CAMBI project for Digesters 1 and 2 was effectively drawn on.

Halcrow considered that this may have led to the construction cost estimate, prepared by BCC at the time, equating to only half of the actual tendered price. Halcrow stated that it is therefore difficult to agree that this early stage of the project was executed efficiently. Timing delays during 2010 were also an issue. However, it is possible that these may have been in part related to the transition of asset ownership and operation from the council to QUU in 2010 and the devastating flood effects of 2011.

Halcrow considered that QUU's process to appoint John Holland seemed appropriate and QUU appeared to have gained efficiencies from doing so. Once the project reached the

[13] Cambi is a patented thermal hydrolysis process for treating municipal and industrial waste prior to anaerobic digestion. Most conventional biogas technologies operates with 70°C. The Cambi process treats the organic matter at 165-170°C, dissolving it into a more digestible feed for biogas production by anaerobic digestion, while destroying any harmful organisms (pathogens). The process is energy-efficient with low operating costs (http://www.cambi.no/wip4/plant.epl?cat=10645&id=195088).

post-market submission stage, QUU appeared to have adequately and appropriately allocated overhead costs.

Halcrow found some difficulty tracking actual costs related to this project as many peripheral project components have been undertaken under other project budgets. Halcrow noted that this has made identification of the true total cost of the enhancement project difficult.

Halcrow considered that QUU had improved its process over time and that the tail-end execution of this project is considered efficient.

Conclusion

Halcrow considered the proposed upgrade works, which will improve the treatment efficiency of the Brisbane Oxley Creek WRP, to be prudent. Given that Digesters 1 and 2 already operate on the CAMBI process, enhancing the offline Digesters 3 and 4 with the same process is also considered prudent.

Notwithstanding considerable projects delays and considerable movements from the original project cost estimates to the amount now committed under contract, Halcrow found the forecast cost of the proposed work to be generally efficient.

The Authority accepts Halcrow's finding with regards to the upgrade of the Brisbane Oxley Creek WRP.

Ipswich Deebing Creek Sewer Trunk Main Augmentation – Stage 1

The Deebing Creek sewerage catchment drains to an existing sewage pumping station (SP13) located at Winston Street, Ipswich, which in turn pumps flow to SP16 via a DN150 rising main and associated DN300-DN600 gravity sewers. SP13, which has a design capacity of 30 litres per second, is significantly overloaded with a reported history of wet weather overflow events.

On the basis of the existing and forecast levels of growth within the catchment, QUU proposes to incrementally upgrade the existing trunk sewer system over two stages. The initial stage would comprise of decommissioning the existing SP13 and diverting flow to a temporary pumping station via 810 metres of new gravity trunk sewer. Further augmentation would be completed only when levels of growth within the catchment require additional capacity. This staged approach will ensure that additional system capacity is not provided until forecast levels of population growth within the catchment are realised. Delivery of the ultimate scheme will provide a gravity system that eliminates the need for a pumping station.

The capital expenditure proposed is $1.0 million in 2012-13.

Table 1.39: Ipswich Deebing Creek Sewer Trunk Main Augmentation – Stage 1 ($m)

Project	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	0.546	4.245	1.00	0	0	5.79

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

Halcrow noted that the scheme has a number of economic factors driving investment on this asset. Due to the fact that actual peak wet weather flow rate (PWWF) exceeds the design capacity of SP13 by 50%, growth is the primary driver for investment. As the pumping

station has been subject to a number of wet weather overflows and pollution events in recent years, quality compliance is also a key driver for investment.

Additionally, the existing SP13 is approximately 30 years old and nearing the end of its design life and on this basis it is in need of base maintenance expenditure in order to maintain serviceability.

With regards to prudency, Halcrow noted that as the Deebing Creek Trunk Sewer collection system is already under capacity. Load within the catchment is forecast to increase as new development comes on line. Therefore, augmentation of the trunk sewer network is considered to be both necessary and prudent.

Halcrow considered that QUU has adopted a sensible approach to the project, phasing delivery over a number of stages to ensure additional trunk sewer capacity is consistent with level of growth within the catchment. This ensures that augmentation is only provided when actual load on the catchment demands it.

Efficiency

Halcrow considered the procurement strategy to be appropriate and ensured that a best value, low cost option was delivered.

Halcrow's review of the post-market submission highlighted the fact that post-tender negotiation with the preferred contractor further reduced the contract price, thereby improving the cost effectiveness of the scheme. In addition, QUU had undertaken a Net Present Value (NPV) analysis which accounted for whole of life costs, and the final solution, which involved the abandonment of an existing pumping station, would further reduce the annual operating costs to the catchment, thereby ensuring that the solution is both efficient and cost effective.

Halcrow noted that the cost estimate was inclusive of a 10% contingency allowance and 24% project-related QUU costs, which include an 11% allowance for design management. Halcrow considered that as the contract was let on a design and construct basis, the level of the QUU design allowance seemed to be disproportionately high, suggesting a higher level of QUU involvement in the delivery of the project than would normally be expected. Halcrow considered that this may be due to the fact there is limited integration between the project planning and project delivery functions at QUU, resulting in duplication of effort.

Notwithstanding the above, Halcrow advised that the scheme appears to have been delivered efficiently with a large proportion of the 10% allowance for contingency not required.

Conclusion

Halcrow found that QUU had provided sufficient information to establish that the project is prudent and efficient.

On the basis of Halcrow's advice, the Authority accepts that the Ipswich Deebing Creek Sewer Trunk Main Augmentation – Stage 1 is prudent and efficient.

Ipswich Rosewood WRP Upgrade – Stage 2a

The Rosewood Sewage Treatment plant (STP) was constructed in the 1960s and augmented in 1999. Present expectations of the Rosewood STP catchment is that it will grow significantly from an existing base of approximately 3,251EP to an ultimate capacity of 60,000EP by 2060.

Prior to commencing feasibility study investigation in 2009, the existing Rosewood STP was licensed to 4,000EP capacity and discharge to Western Creek. At the time, the highest capacity unit processes were assessed at 2,300EP and it was thought that a 7,500EP capacity plant would be required by 2012.

A subsequent review found that optimisation to 4,000EP capacity would serve the needs of the catchment until 2016. This is the limit to which the plant may be upgraded/optimised within its existing licence conditions. A staging strategy is being implemented which provides for optimising capacity of the existing STP up to 4,000EP by 2012 at the latest, subject to confirmation DERM and deferring major upgrade works until approximately 2016. A major plant upgrade will then be required to provide for future population growth in around 2016-17.

The capital expenditure proposed is $3.66 million in 2012-13.

Table 1.40: Ipswich Rosewood WRP Upgrade – Stage 2a ($m)

Project	*2010-2011*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	0.546	1.80	3.66	0	0	5.79

Note: Capital expenditure as incurred. Source: Halcrow (2012)

Prudency

Halcrow noted that the drivers for this project are primarily growth related. QUU would like to facilitate sustainable growth of the Rosewood STP catchment in accordance with the significant population increase in this area as defined in the SEQ Regional Plan. In doing this, QUU must comply with licence conditions and achieve water quality objectives in accordance with the Environmental Protection Policy.

QUU also has a commitment to achieving improved waterway health and agreed actions as defined in the SEQ Healthy Waterways Strategy and Point Source Pollution Management Action Plan. With the planned upgrade, the system will operate within the design standards of QUU.

Halcrow noted that there was some difficulty in appropriately scoping this project as studies relating to this project first began by the Ipswich City Council in 2007. However, Halcrow considered that by revising the design capacity and postponing the upgrade until approximately 2017, QUU has shown prudence in attempting to delay expenditure of around $20 million.

The difficulty however, according to Halcrow, is making sure the right balance is struck so that the upgrade works conducted on the existing STP may be incorporated into any future plant. Halcrow noted that it was not clear how the 2012 upgrade would interface with any future plant and this decision does not appear to have been factored into the enhancement of the existing plant.

Halcrow considered that the manner in which QUU had handled the procurement legacy project from Ipswich City Council is prudent. Halcrow advised that QUU has proven that there is a need for this upgrade and it engaged relevant stakeholders.

Efficiency

Halcrow considered that the delivery of the project since the variation report was prepared in 2011 appears to be efficient. The tender assessment process for the Stage 2a work appears to

have been reasonable, with similar tender prices being submitted. Halcrow noted that this aspect of the process is considered to have resulted in efficient costs.

In terms of contingency, Halcrow noted that QUU initially separated risk items to form the contingency budget which was more reasonable than adopting a blanket figure. Unfortunately, additional risk items were identified which lead to further expenditure being incurred.

Halcrow considered that overall, the additional works funded through the contract contingency was very high. Approximately $2.86 million ($1.194 million plus $1.671 million), which equates to 76% of the initial construction contract value of $3.734 million has been identified. QUU has, however, documented and justified the risks/additional scope incurred in undertaking the project.

Nevertheless, Halcrow recommended an adjustment to expenditure in 2012-13 to reflect the decrease in spending associated with project contingency (originally $249,180, later revised to $10,000) and internal, project and contract management, and operational support costs (originally $294,853 and later revised to $60,472). The total decrease resulted in $473,561 worth of savings for 2012-13.

Halcrow also recommended that an adjustment to the 2013-14 forecast be made to reflect the increase in expenditure of $1.67 million for necessary additional works.

Conclusion

The Ipswich Rosewood WRP upgrade has been assessed by Halcrow as prudent.

With regards to efficiency, Halcrow recommended an adjustment to the 2012-13 expenditure of $473,561 to reflect the decrease in spending associated with project contingency and operational support costs.

Halcrow also recommended increasing the 2013-14 forecast by $1.67 million to reflect the required increase in expenditure for additional works.

Table 1.41: Ipswich Rosewood WRP Upgrade – Stage 2a Revised Expenditure Profile ($m)

Project	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	.107	1.8	3.66	0	0	5.58
QCA Adjustment			-0.47	+1.67		+1.19
QCA Recommended	.107	1.87	3.19	1.67	0	6.77

Note: Capital expenditure as incurred. Source: Halcrow (2012).

On the basis of Halcrow's advice, the Authority accepts that the Ipswich Rosewood WRP upgrade is prudent and that the 2012-13 and 2013-2014 forecast be adjusted.

Brisbane Water Meters Renewals

The Brisbane Water Meters Renewals Program comprises a rolling program of mechanical testing and refurbishments, implemented in order to maintain operational performance of domestic and non-domestic meters used for billing purposes. An Asset Management Plan established the need to accelerate the number of meter replacements between 2007-08 and 2012-13 in order to minimise risk of meter failure and to keep pace with meter degradation

over time. The greatest need was found to be replacement of 20mm meters installed in Brisbane in the early 1990s.

Many of Brisbane's domestic properties are fitted with meters that have different threads to the rest of Australia (installed with the intention of reducing theft) and are manifold type meters (not the standard in-line meter type). Other associated issues include replacing galvanised services, implementing consistent serial numbers, data cleansing, failed tests and large users.

The capital expenditure proposed is $5.60 million in 2012-13.

Table 1.42: Brisbane Water Meter Renewals ($m)

Project	*2010-2011*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	3.75	4.55	5.60	4.13	4.08	22.14

Note: Capital expenditure as incurred. Source: Halcrow (2012)

Prudency

Halcrow advised that ongoing renewal of water meters is considered prudent, on the basis that statistics indicate that the meters are likely to be faulty.

Halcrow noted that a request had been generated internally to bring forward $2 million of expenditure to overcome the backlog of high priority work, however, this has not yet been approved. Halcrow considered that QUU should analyse real data associated with lost revenue prior to bringing this work forward to 2013-14. Any expenditure advancement should be justified on the basis of cost savings and maintenance savings over the longer term.

Efficiency

With regards to efficiency, Halcrow stated that it was difficult to agree that the current arrangements of sourcing multiple meter types based on what is cheapest on the market at present is most the efficient in the longer term. Halcrow suggested that options should be assessed to source one or two meter types under term supply contracts. Halcrow considered that such contracts would be based on a guaranteed quantity of meter purchase over a minimum one year period. This approach would achieve savings (potentially in the order of 5%) in future years, whilst also providing consistency across QUU's portfolio of metering assets.

Halcrow recommended the removal of the $314,200 to reflect the difference between the unit costs shown in the Business Case and the actual unit cost incurred in the renewals program list. In addition, Halcrow considered that an ongoing efficiency saving of 5% should be achieved through the adoption of period supply contracts for a small number of preferred meter types.

Conclusion

This project was assessed by Halcrow as being prudent, on the basis that statistics indicate that the meters are likely to be at fault.

With regards to efficiency, Halcrow recommend the removal of $314,200 to reflect the difference in the unit costs shown in the Business case and the actual unit costs incurred in the renewals list, together with an ongoing efficiency saving of 5% to be achieved through the adoption of period supply contracts for a small number of preferred meter types.

The Authority accepts Halcrow's recommendation with regards to the Brisbane Water Meters Renewal Program.

Table 1.43: Brisbane Water Meter Renewals ($m) – Revised Expenditure Profile

Project	*2010-2011*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	3.75	4.55	5.60	4.13	4.08	22.14
QCA Adjustment			-0.314	-0.206	-0.204	-0.724
QCA Recommended	3.75	4.55	5.29	3.93	3.88	21.41

Note: Capital expenditure as incurred. Source: Halcrow (2012)

Brisbane Gibson Island WRP - Sludge Dewatering Enhancement

The existing Belt Filter Presses (BFPs[14]) at the Brisbane Gibson Island WRP are in the order of 23 years old, at the end of their design life and proving to be unreliable with frequent failures reported over the past two years. Recent maintenance costs have ranged between $60,000-120,000 per annum, which is significantly higher than typical annual maintenance costs reported at other similar QUU sludge treatment facilities (circa $15,000 per annum).

QUU advised that the plant operators at the Gibson Island WRP have been forced to progressively reduce the throughput rates to the BFPs to keep them running reliably. As a consequence, the current sludge concentration in the bioreactor has been dramatically increased. This creates risks of non-compliance with the plant discharge licence.

The project involves the 'like for like' replacement of existing BFPs with three new BFPs and associated auxiliary equipment.

The capital expenditure proposed is $2.97 million in 2012-13.

Table 1.44: Gibson Island WRP – Sludge Dewatering Enhancement – Proposed Capital Expenditure Profile ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	0.11	1.729	2.97	0	0	4,815

Note: Capital expenditure as incurred. Source: QUU (2012).

Prudency

Halcrow noted that on the basis that the existing BFPs are nearing the end of their design life and not operating reliably, and the associated increasing maintenance costs, the replacement of the BFPs is considered both necessary and prudent.

Halcrow considered that QUU has adopted a sensible approach to the project, phasing delivery over two stages to ensure reliable sludge dewatering facilities are provided in the short term and additional sludge transport and chemical dosing assets (which will reduce operating costs) are provided in the future, if and when needed. This approach will ensure capital expenditure is only incurred on assets as they are needed.

[14] Belt filter presses are used to remove water from liquid wastewater residuals.

Efficiency

Halcrow considered the approach to procurement provides QUU with an element of control without the overall responsibility for delivery. However, while this does not guarantee the lowest cost option, the open book assessment approach provides an arrangement under which QUU is able to negotiate scope and cost of individual elements, thereby ensuring that it is delivered with an asset that the organisation is comfortable with, whilst reducing the overall whole of life cost of the asset through reduced operating costs.

Halcrow's review of the post-market submission highlighted that post-tender negotiation with the preferred contractor resulted in a further $0.4 million reduction in the contract price, thereby improving the cost effectiveness of the scheme.

Based on the above information, Halcrow considered the expenditure to be efficient.

Conclusion

Halcrow assessed the project as prudent on the basis that the existing BFPs are nearing the end of their design life and not operating reliably, and the associated increasing maintenance costs.

Halcrow assessed the project as efficient on the basis that the assessment approach provides an arrangement under which QUU is able to negotiate scope and cost of individual elements, thereby ensuring that it is delivered with an asset that the organisation is comfortable with, whilst reducing the overall whole of life cost of the asset through reduced operating costs.

The Authority accepts Halcrow's findings on this project.

Brisbane Water Reservoirs Renewals Program

The Brisbane Water Reservoirs Renewals Program is rolling program implemented with the aim of minimising the risk of failure of reservoirs, while maximising the operable life of the assets, optimising water quality and ensuring compliance with current Australian Standards. This program aims to renew/upgrade those reservoirs which are deemed to be in the poorest condition. Prioritisation is based on the findings of condition audits.

Three sub-projects related to reservoir renewals are programmed to be delivered in 2012-2013, as follows:

(a) Tarragandi Reservoir Roof Project;

(b) Tarragandi Water Reservoir Floor Joints, Columns, & Valve Towers Repairs; and

(c) Rehabilitation of Manly Elevated Steel Tank.

Tarragandi Reservoir Roof project and Tarragandi Water Reservoir Floor Joints, Columns, & Valve Towers Repairs

These are civil/structural projects being delivered over two years, 2011-12 and 2012-13.

The oval shaped Tarragandi Reservoir (R-05) services approximately 30,000 properties as well as the Toohey Mountain and Highgate Hill Reservoirs. Since construction in 1923, Tarragandi Reservoir has had several upgrades to its concrete reservoir structure and its timber and steel roof.

In 2009, a visual condition assessment of the entire roof structure (all timber purlins, timber rafters, steel I-beam and roof sheeting), was undertaken which identified issues with the roof sheeting and support structure that required immediate attention. In 2010, a preliminary

condition assessment of the site identified high priority defects in relation to leaking floor joints and cracks in the east and west overflow towers.

Halcrow noted that if no action is taken to rehabilitate the tower, the risks to water distribution include water ingress into the structure, water quality issues and non-compliance of AS3735 (Water Retaining Structures Code) for water tightness.

Manly Elevated Steel Tank Reservoir

The tank, which has a storage capacity of 1 mega litre, was commissioned in 1953. The tank is elevated 30 metres above ground and is supported by six mild steel braced columns. In 2005, a condition report found that urgent repair to the external coatings, substantial repair work to internal ceiling surfaces and minor patchwork to the walls and floor within the tank was required.

Hydraulic models indicated that the Manly Elevated Steel Tank is not required for water distribution. The tank is, however, a prominent district landmark and is registered under the Heritage Register Planning Scheme.

Table 1.45: Brisbane Water Reservoirs Renewals program - Proposed Capital Expenditure Profile ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	0.08	1.09	4.65	1.55	1.59	8.9

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

The key drivers listed in the Capital Investment Program are:

(a) to maintain water supply provision in accordance with QUU's customer service reliability standards;

(b) maintaining network reliability and performance; and

(c) economic benefit.

Halcrow noted that there was a clear need to maintain ongoing design performance at the Tarragandi Reservoir, as potentially further degradation could lead to more severe impacts and further downtime. Although the driver "economic benefit" was not well defined by QUU, Halcrow agreed that the proposed works related to Tarragandi Reservoir would have additional benefits in reducing whole of life costs.

Halcrow did not, however, consider the project drivers listed in the Capital Investment Program appropriate for the Manly Elevated Steel Tank without a detailed options assessment which takes into consideration the potential decommissioning of the tank. The project has proceeded on the basis of heritage importance and for use in emergency situations.

(a) Tarragandi Reservoir

Halcrow advised that on the basis that the existing Tarragandi Reservoir is not operating safely and reliably, and is currently was not meeting Australian Standards, the roof replacement is considered both necessary and prudent. QUU's approach to conducting

rehabilitation of floor joints, columns and valve towers repairs whilst the reservoir was taken offline was sensible and prudent.

Furthermore, the eventual separation of work packages between the roof and 'floor joints, columns and valve towers' was appropriate given that the nature of work is very different and such separation would likely lead to cost efficiencies. Halcrow noted that whilst it is unclear why these three packages were originally tendered together, QUU subsequently recognised this and changed its delivery approach.

(b) Manly Elevated Steel Tank

Halcrow advised that the full rehabilitation of Manly Elevated Steel tank is not considered prudent for the following reasons:

(a) it is no longer required for water supply purposes;

(b) no detailed options assessment was undertaken that considered potential decommissioning;

(c) the project cost has amounted to some $1,240,750 or 2.67 times the original estimated amount; it may have been viable to completely replace the entire tank; and

(d) the project appears to be completely driven by heritage requirements.

Halcrow noted that whilst it is recognised that QUU will have an obligation in respect of identified heritage assets, in the absence of demonstrated functional requirements, any work should be limited to that required in respect of that status. Typically this will include work required to maintain safety (e.g. maintenance of the support structure), but would not include full rehabilitation of the structure.

Efficiency

(a) Tarragindi Reservoir

Halcrow noted that the cost estimates appeared to be reasonable based on QUU construction methodology and the fact that the projects were competitively tendered. However, initial estimates of contingency are considered high for the roof project, where the scope of the project was very well defined.

For example, a contingency allowance of 26.5% for the roofing project is deemed excessive given that the nature of the work is relatively well defined. Furthermore, the 25% (total) allowance for design costs, design management, project management and contract management are considered excessive on projects that will involve minimal design input. These allowances appear, however, to have been reduced to a more appropriate level at the post-market review stage.

As a result, the tendered price was far less than was originally estimated. Halcrow suggested that, going forward, QUU should only consider applying higher contingency if aspects of work are undefined or high risk.

Application of the full typical allowance for design and design management costs to the roof project appears excessive given the nature of the work involved. Whilst some design input may well be justified, management of the work will be undertaken predominantly within the contract management allowance.

Halcrow recommended adjustments which reflect updated information on the cost of the project, reducing the Tarragindi project by $558,000.

(b) Many Elevated Steel Tank

Halcrow stated that although this project is not considered to be prudent, delivery of the adopted scope of work does appear to be efficient, albeit that subsequent information indicated an increase in costs from $273,000 to $800,000.

Halcrow recommended that that only expenditure associated with making the structure safe be recognised as being prudent and efficient. While it is difficult to assess the value of 'safety' works in the absence of a detailed breakdown of costs, the works involve external repair and coating of the tank, internal repair and coating of the tank and re-painting of the support structure (approximately $150,000 direct cost). It could be considered that only the external works would be required from a safety viewpoint.

Given that the total project cost now amounts to $1.24 million it is suggested that a maximum of 50% of this amount be considered prudent. It is therefore recommended that the forecast expenditure for 2012-13 be reduced by $620,000.

Table 1.46: Brisbane Water Reservoirs Renewals Program – Forecast 2012-13 Capital Expenditure ($'000 nominal)

Source		*Amount*
QUU Forecast		4,653
Less reduced cost on Tarragandi Reservoir Roof project	-558	
Less forecast allowance for Manly Elevated Tank in 2012-13	-273	
Plus revised 2012-13 allowance for Manly Elevated Tank	+800	
Less estimate of expenditure not deemed prudent	-620	
Net Adjustments	-651	-651
Revised Expenditure		4,002

Note: Capital expenditure as incurred. Source: Halcrow (2012)

Conclusions

Halcrow found the Tarragandi Reservoir projects to be prudent and efficient, subject to an adjustment for more updated information.

For the Manly Elevated Steel tank, Halcrow found that full rehabilitation is not prudent. Works should be limited to meeting QUU's obligations in respect of heritage assets and expenditure reduced accordingly,

Halcrow recommended a net reduction to forecast expenditure for 2012-13 of $651,000.

The Authority accepts Halcrow's findings in relation to this project.

Brisbane Water Reclamation Plant Renewals Program

The Brisbane Water Reclamation Plant Renewals Program comprises an ongoing program of asset renewal at QUU's 28 water reclamation plants. The ages of assets at the plants range from 1 to 45 years. Most civil assets are still within their anticipated useful life, whereas a significant proportion of mechanical and electrical assets have exceeded their useful asset

lives and are 25 to 40 years old. Obsolescence is an issue for the older mechanical and electrical equipment.

A program comprising 14 separate projects has been identified for implementation during 2012-13 and these relate predominantly to mechanical and electrical assets. Projects are identified and prioritised based on performance, condition of asset and risk assessment. In some cases, infrastructure identified for rehabilitation will require upsizing to service population growth.

Halcrow has reviewed three of the projects in more detail:

(a) BWWTAAO1A26 Brisbane Luggage Point WRP Effluent Switchboard (Electrical Reticulation) - an electrical project to replace the switchboard, assess and upgrade earthing, install air conditioning/filtering and replace light weight ceilings and walls to create a sealed environment. The Luggage Point WRP effluent switchboard was manufactured in 1975, making it 37 years old. It is no longer possible to procure replacement parts. The condition assessment indicates it has damaged earth bars;

(b) BWWTAA01A41 Brisbane Luggage Point WRP Digester Roof Rehabilitation - There are six digesters at the Luggage Point WRP; they were originally installed in the 1970s. It was noted in 2010 that the digesters would require rehabilitation over the next few years. There are noticeable leaks where methane gas is escaping from the digesters; unsuccessful efforts have been made in the past to seal cracks. The escaping methane is highly flammable and is increasing greenhouse gas emissions; and

(c) BWWTAA01A75 Brisbane Rocks Riverside Septic Tank and Wet Well Rehabilitation - the WRP at Rocks Riverside contains a septic tank and wet well. The effluent from the wet well is pumped to horizontal and vertical filter beds located for polishing[15] . The condition of these structures has deteriorated and they require rehabilitation. If rehabilitation is not completed, the risks are structural failure of the wet well and septic tank and an inability to supply the settlement ponds at Rocks Riverside.

Table 1.47: Brisbane Water Reclamation Renewals program - proposed capital expenditure profile ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	2.68	2.91	4.40	4.66	4.63	19.30

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

The following drivers have been listed by QUU in its renewals project summary:

(a) ensure that the useful asset life of infrastructure is reached;

(b) replacement/rehabilitation of the wastewater treatment assets to address safety, maintainability, operability, obsolescence, environmental and/or financial drivers;

(c) to maintain sewerage provision in accordance with relevant Reliability Standards;

(d) ensure compliance with Environmental Licence Conditions;

[15] A process to remove suspended solids

(e) maintaining WWTP reliability and performance; and

(f) economic benefit.

Halcrow stated that its review of the three sample projects demonstrated that there is a suitable need for renewals to be undertaken on these projects. Halcrow considered that QUU had also demonstrated prudency in project selection and in delaying renewals where future upgrades are planned.

Efficiency

Halcrow noted that there is little evidence to suggest that cost efficiency is being achieved for the three sample projects.

(a) BWWTAA01A26 Brisbane Luggage Point WRP Effluent Switchboard (Electrical Reticulation)

Halcrow recommended that $53,000 be deducted from each of projects BWWTAA01A26 and BWWTAA01A21. These projects were planned to be completed as a package with BWWTAA01A18 however, this project is now not proceeding and therefore the associated civil construction costs, contingency and overheads should also be removed (on a proportional basis).

(b) BWWTAA01A41 Brisbane Luggage Point WRP Digester Roof Rehabilitation

QUU advised that, in establishing its cost estimates, no allowance was included for repair the roof of the digesters. This is unusual, given that the project has progressed to roof repair and the estimated costs has increased from some $300,000 (established in March 2010 submission to the rolling program).

Halcrow is of the view that, if rehabilitation of the two digester roofs is tendered as a package, this would save at minimum in the order of 10% of construction costs, specifically costs related to site preliminaries and management (which are related to project establishment and duration). Furthermore, procurement and other overhead costs would be proportionately reduced in comparison to the reference project which involved renewal of a single roof only.

As the roof upgrades are likely to be undertaken by a single contractor and delivered concurrently, Halcrow considered that the allowance for construction costs should be reduced by 10%, i.e. from $700,000 to $630,000 (for the two digesters). This will lead to a reduction in overheads from $231,168 to $208,051, a further saving of $23,117, which results in an estimated total potential reduction of $93,117.

(c) BWWTAA01A75 Brisbane Rocks Riverside Septic Tank and Wet Well Rehabilitation

With respect to project the Rocks Riverside Septic Tank and Wet Well Rehabilitation, there has been a ‘double-up’ of contingency allowances, with allowances included in both the independent construction estimate and the further estimate by QUU. It is recommended that QUU’s additional 20% contingency allowance, representing some $57,000, is removed.

A summary of the calculated deduction is provided below, based on redundant scope or excess contingency having been factored into projects. Projects that were not reviewed have had a recommended global 5% deduction applied on the basis of the savings identified in respect of the sample of projects reviewed (see below).

Table 1.48: Brisbane Water Reclamation Renewals program - Revised Capital Expenditure Profile ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	2.68	2.91	4.40	4.66	4.63	19.30
QCA Adjustment			-0.360	-0.232	-0.232	-0.824
QCA Recommended	2.68	2.91	4.04	4.43	4.39	18.48

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Conclusion

Halcrow assessed the project as being prudent.

With regards to efficiency, Halcrow recommended a reduction in the forecast expenditure for 2012-13. This reflects redundant scope, expected efficiency and excess contingency having been factored into the reviewed projects. A global 5% reduction has been applied to the remaining projects on the basis of the savings identified in respect of the sample of projects reviewed; this has also been applied to forecast expenditure in forward years. The net reduction in 2012-13 amounts to $360,000.

The Authority accepts Halcrow's findings in relation to this project.

Brisbane Sewer Pump Station Reliability Improvement Program

The Sewer Pump Station (SPS) Reliability Improvement Program is an ongoing, rolling program to rehabilitate and enhance the automatic control and telemetry assets across QUU's network of 199 SPSs.

The program is driven by the Brisbane Water target (carried on by QUU) of zero tolerance to dry weather overflows from SPS due to telemetry/mechanical failure. As a result of a major dry weather overflow incident which occurred in 2005 due to multiple probe system failure, QUU has committed to deliver, on a prioritised basis (relating to 'time to overflow'), improvements to each SPS within the QUU network.

For each identified SPS, QUU proposes to bring all existing probe, control and telemetry systems up to a standard that meets high-reliability design criteria. In the five years since the start of the program in 2007, it has delivered (or is in the process of delivering) improvements to 111 of the 199 SPS, with a further 27 outputs forecast for delivery in 2012 13.

The capital expenditure proposed is $4.19 million in 2012-13. The forecast expenditure for the 2012-13 program was based on average historic costs achieved in the delivery of this rolling program over the previous five years.

Table 1.49: Brisbane Sewer Pump Station Reliability Improvement - Proposed Capital Expenditure Profile ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	3.61	3.29	4.19	0	0	11.10

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

Halcrow noted that a proactive approach to SPS upgrades in order to guarantee SPS reliability ensures that QUU will maintain compliance with all regulatory obligations associated with SPS operation and performance. However, Halcrow noted that this major commitment appears to have been based on a single service failure at Heroes Avenue SPS103 that occurred in 2005.

Halcrow considered that the ongoing delivery of this rolling program demonstrated that QUU has a very low appetite for risk, in terms of both regulatory and reputational risk. Whilst total protection against asset failure is an aspirational target within a water business, and it is recognised that this program is a legacy issue reflecting a commitment made by a predecessor organisation prior to the formation of QUU, Halcrow does not believe it is prudent to systematically replace mechanical and electrical equipment on the basis of age and type, with limited regard to measured asset performance.

Halcrow further noted that a comprehensive replacement, regardless of performance, does not provide good value for money to its customer base. Halcrow considered that a more balanced approach should be considered, striking a balance between asset performance and cost. Halcrow stated that on this basis, it may be more prudent for QUU to maintain a regular monitoring and maintenance regime of its SPS network and proactively replace assets when the level of deterioration is demonstrable.

Based on the available information, Halcrow did not consider this program to be prudent. The Authority notes that Halcrow did not recommend removal of the program. Further, the difference in cost between the proposed program (low risk) and one with a more balanced approach could not be estimated based on the information provided. Adjustments are identified below.

Efficiency

Halcrow did not consider QUU's current approach to program delivery to be efficient.

Halcrow noted that whilst the separate procurement of relatively small, design, supply and construct packages enables QUU to maintain control over delivery of the program and ensure delivery by specialist contractors, it is not conducive to driving efficiencies into the project delivery process. Halcrow stated that the separate tender for each package does not even ensure a consistent approach to delivery, as a variety of different contractors have historically been successful.

Halcrow considered that a long-term, reasonably well defined program of renewals would normally lend itself to a separately tendered, long-term framework contract that would potentially introduce economies of scale through reduced procurement costs and lower unit costs due to the surety of work.

Whilst Halcrow did not consider the program to be prudent or particularly efficient, it noted that this is a legacy program that reflects a commitment made prior to the formation of QUU, and is at an advanced stage of delivery. Halcrow also commented that QUU is reconsidering the delivery mechanism for this program, which may deliver additional efficiencies.

On this basis, Halcrow expects a reduction in future expenditure to reflect these efficiencies. However, Halcrow does not consider further reduction in the 2012-13 expenditure forecast to be appropriate.

Conclusion

Halcrow did not consider this program to be prudent or efficient. Halcrow considered a more balanced approach to replacement should be adopted, striking a balance between asset performance and cost. Further, a separately tendered, long term framework contract would introduce economies of scale through reduced procurement costs and lower unit costs due to the surety of work. However, Halcrow did not adjust QUU's cost estimates as it is legacy program.

The Authority accepts Halcrow's view that the program is not prudent or particularly efficient but takes a different view on the adjustments to be applied. As stated in previous reviews, the Authority does not consider that legacy projects should be immune from adjustment. As only prudent and efficient capital expenditure should be included in the MAR, the Authority has applied a 5% adjustment to the 2012-13 costs to reflect the inefficiencies identified by Halcrow.

This results in a reduction of $200,500 in the project costs to $3.89 million.

Brisbane Sewer Pump Stations Renewals Program

The Brisbane SPS Renewals Program is a rolling program of civil, mechanical and electrical refurbishments, undertaken in order to maintain the operational performance of the 199 SPS located within the Brisbane metropolitan area, and proactively reduce the risk of service failure. For 2012-13, QUU proposes to undertake refurbishment work on 11 separate SPS.

The SPS renewals program defined for 2012-13 predominantly involves the 'like for like' replacement of mechanical and electrical equipment that has either failed or is reaching the end of its design life. QUU has submitted that the capital expenditure is $4.1 million in 2012-13.

Table 1.50: Brisbane Sewer Pump Station Renewals Program - Proposed Capital Expenditure Profile ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	1.37	0.926	4.11	4.10	4.20	17.71

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

The overall program is driven by the requirement to undertake asset maintenance on the SPS network in order to maintain serviceability. Expenditure within this program is driven by a number of factors, including:

(a) health and safety;

(b) failure frequency;

(c) asset condition and age;

(d) technical obsolescence of equipment; and

(e) maintenance and operating costs.

Halcrow considered that in order to maintain the operational performance of the 199 SPS located within the Brisbane metropolitan area, and proactively reduce the risk of service

failure, a rolling program of civil, mechanical and electrical refurbishments is both prudent and necessary.

Halcrow noted that QUU has adopted a systematic approach to the development of individual projects, based on condition monitoring (for avoid fail assets) and asset performance (for run to fail assets). Whilst the overall program appears to have been developed on an ad-hoc basis, based on individual business cases, Halcrow understands that actual measured asset condition and performance is used as a trigger to progress each business case.

Notwithstanding this, for a routine but necessary program of this nature, Halcrow considered that a more holistic approach to program development and delivery that would enable QUU to better define the work in advance of delivery and also explore different delivery methods which would assist in improving the efficiency of delivery.

Efficiency

Halcrow found that the costs were generally based on generic unit rates (using QUU day rates) and an estimated bill of quantities. For larger items, such as pumps and pipes, budget cost estimates have been provided by relevant suppliers. Halcrow noted that the estimated costs had also been adjusted to allow for various QUU management costs, and Halcrow found the percentage adjustments to be consistent with standard engineering practice. Halcrow noted that all cost estimates used to build up the estimated cost of this program were based on the assumption that work will be delivered by QUU day labour.

Halcrow noted that QUU applied a variable percentage contingency adjustment to each of the 11 schemes, ranging from 20% to 55%. Halcrow stated that while it is usual practice to include for contingency within project estimates, Halcrow considered the overall contingency allowance to be quite high and as a result, efficiencies may be achieved during the procurement and delivery of the program. For example, in the case of Gibson Island WRP, a 55% allowance for scope and construction creep was considered to be in excess of that normally expected. Halcrow's review of that particular project proposal did not identify any engineering complexities that would warrant such a large allowance for variance.

In recognition of these expected efficiencies, Halcrow recommended an adjustment to the 2012-13 expenditure forecast reflective of adjusting the contingency allowance to a maximum of 10% on the 'like for like' mechanical and electrical replacement schemes and 30% on the Gibson Island suction pipe replacement scheme. On this basis, Halcrow recommend that the forecast expenditure in 2012-13 should be reduced by $305,000.

Conclusions

Based on the information available, Halcrow considered this program to be efficient.

With regards to efficiency, Halcrow considered the overall contingency allowances applied by QUU to be above efficient levels and recommended an adjustment be applied.

The Authority accepts Halcrow's findings with respect to this program.

Table 1.51: Brisbane Sewer Pump Station Renewals Program - Revised Capital Expenditure Profile ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU Proposed	1.37	0.926	4.11	4.10	4.20	17.71
QCA Adjustment			-0.305			-0.305
QCA Recommended	1.37	0.926	3.814	4.10	4.20	

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Non-Sampled Projects

As noted above, Halcrow found the contingency allowances applied by QUU to projects within the renewals programs to be excessive. In support of Halcrow's assessment, the *Review of Owner's Costs and Contingency Allowances*[16] , prepared by Evans and Peck for the Authority in 2009, stated that projects with a delivery horizon of 0-5 years should have a contingency allowance of 5-10%.

Of the remaining sampled projects, adjustments were made to one project. Halcrow noted that as the basis of the adjustment is not systemic, extrapolation is not considered appropriate.

Halcrow therefore recommended applying an overall reduction in non-sampled renewals expenditure:

(a) for 2012-13 – a reduction of 5% (which equates to the lower limit of adjustments made to sampled projects);

(b) for 2013-14 – a reduction of 4% (incremental change between 2012-13 and 2014-15); and

(c) for 2014-15 – a reduction of 3% (a decrease in contingency from 18% to 15% to account for less developed schemes).

The Authority has accepted Halcrow's recommendation to apply that the renewals expenditure be adjusted to ensure that the contingencies are more realistic given the various stages of the programs.

Halcrow made some further summary observations arising from the review, as follows:

(a) QUU has a very low appetite for risk within the business, and some of its funded programs of work were based on a 'zero failure' driver. Whilst total protection against asset failure is an aspirational target, comprehensive replacement, regardless of performance, does not provide good value for money to its customer base. A more balanced approach should be considered, striking a balance between asset performance and cost;

(b) the individual projects within a number of rolling renewals programs were developed on an ad-hoc basis, based on individual business cases. Halcrow would expect to see evidence of a more holistic approach to program development and delivery that would

[16] Evans and Peck, *Review of Owner's Project Cost and Contingency Allowances*; Queensland Competition Authority, November 2009.

enable QUU to better define the work in advance of delivery and also explore different delivery methods which would assist in improving the efficiency of delivery; and

(c) following on from the above, QUU has tended to procure these programs in relatively small, separate design, supply and construct packages. A long term, reasonably well-defined program of renewals would normally lend itself to a separately tendered, long-term framework contract that could introduce economies of scale through reduced procurement costs and lower unit costs due to the surety of work.

Summary

On the basis of Halcrow's detailed review of 10 sampled projects, the Authority has reduced 2012-13 expenditure in respect of seven projects. A 5% reduction has been applied to non-sampled renewals projects to adjust for excessive contingency allowances (this is not evident in other expenditure).

The Authority notes that Halcrow has also identified that QUU could achieve further efficiencies and economies of scale in capital procurement going forward.

Table 1.52: Review of Capital Expenditure for 2012-13 ($m)

Project	*Cost 2012-13*	*Prudent*	*Efficient*	*Revised Cost 2012-13*
Sampled Projects				
1. Brisbane Sewer Rising Mains Renewals	7.21	Prudent	Not Efficient	6.87
2. Brisbane Oxley Creek WRP – Primary Digesters Environmental Improvements	3.49	Prudent	Efficient	3.49
3. Ipswich Deebing Creek Sewer Trunk Main Augmentation – Stage 1	1.00	Prudent	Efficient	1.00
4. Ipswich Rosewood WRP Upgrade	3.66	Prudent	Not Efficient	3.19
5. Brisbane Water Meters Renewals Program	5.60	Prudent	Not Efficient	5.29
6. Brisbane Gibson Island WRP - Sludge Dewatering Enhancement	2.97	Prudent	Efficient	2.97
7. Brisbane Water Reservoirs Renewals Program	4.65	Not Fully Prudent	Not Efficient	4.0
8. Brisbane Water Reclamation Plant Renewals Program	4.40	Prudent	Not Efficient	4.04
9. Brisbane Sewer Pump Station Reliability Improvement Program	4.19	Not Prudent	Not Efficient	3.98
10. Brisbane Sewer Pump Stations Renewals Program	4.11	Prudent	Not Efficient	3.81
Non-Sampled Renewals Projects	**100.60**	**Prudent**	**Not Efficient (5%)**	**95.57**

Note: Capital expenditure as incurred. Source: Halcrow (2012).

These adjustments are made to QUU's capital expenditure as incurred. The Authority has used the QUU model to calculate the effect of these adjustments on capital expenditure as commissioned (on which basis it is included in the RAB).

Table 1.53: Comparison between QUU and Authority's Capital Expenditure ($m)

	2012-13	*2013-14*	*2014-15*	*Total*
Capex (QUU)	354.24	516.38	451.35	1,321.95
QCA adjustments	-8.09	-4.08	-4.56	-16.75
Total Capex	346.14	512.3	446.99	1,305.44

Note: The Authority's adjustments for 2012-13 onwards reflect the impact of its revised estimates on capital expenditure as commissioned. Source: QUU (2012) and QCA calculations using the QUU commissioning model.

On the basis of Halcrow's detailed review of 10 sampled projects, the Authority has reduced 2012-13 expenditure in respect of seven projects. A 5% reduction has been applied to non-sampled renewals projects to adjust for excessive contingency allowances.

1.7.3 Contributed, Donated and Gifted Assets

As noted above, the Ministerial Direction requires the Authority to accept as prudent and efficient contributed, donated and gifted assets (contributed assets) and capital expenditure funded through cash contributions and subsidies (capital contributions) for water and wastewater for the period 1 July 2008 to 30 June 2010.

The Direction also requires the Authority to accept that, in setting prices from 1 July 2008, the councils applied a revenue offset approach to account for contributed assets and capital contributions received and that this approach is to remain in effect until such time that the entity nominates that it will adopt the asset offset method. Where a change in methodology is adopted, the RAB is not to be adjusted retrospectively.

In April 2011, following a recommendation by an infrastructure taskforce in late 2011, the State Government announced its intention to impose maximum capital contributions for trunk infrastructure (including water, wastewater, transport and public parks). Under the legislation that was introduced in June 2011, the maximum capital contributions for all trunk infrastructure networks (including water, sewerage, transport and public parks) are:

(a) $28,000 for dwellings with three or more bedrooms;

(b) $20,000 for dwellings with one or two bedrooms; and

(c) various rates for non-residential development, including $50-$70/m^2 gross floor area (GFA) for industry and $140-180/$m^2$ GFA for commercial.

Under the price monitoring framework, the Authority assesses whether the methodology adopted by the entities to forecast contributed assets and capital contributions is reasonable in the circumstances.

QUU's Submission

QUU submitted that it expected to receive $179.2 million in contributed, donated and gifted assets over the forecast period and $261.2 million in capital (cash) contributions (Table 1.54). QUU has continued to apply a revenue offset approach to the treatment of contributed assets and capital contributions.

Table 1.54: QUU – Contributed, Donated and Gifted Assets & Capital Contributions ($m)

	2009-10	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total 2012-15*
Contributed assets	58.55	55.50	52.86	55.60	60.39	63.19	179.19
Capital contributions[a]	128.58	87.03	63.05	82.09	88.99	90.12	261.19
Total	187.13	142.53	115.91	137.69	149.38	153.31	440.38

[a] *includes grants and subsidies. Source: QUU (2012). Note: QUU applies a revenue offset approach to the treatment of contributed assets and capital contributions.*

Contributed Assets

In forecasting contributed assets, QUU applied cost indexation and expected growth to a base year (2011-12). Cost indexation was based on the forecasts published by the Construction Forecasting Council in September 2011 of 1.0% for 2012-13. QUU based its expected growth on population projections, reduced by 7.5% in Brisbane and 15% in other council areas to reflect the sharp drops in Queensland dwelling approvals and commencements as published by the ABS.

QUU submitted that the growth in 2013-14 and 2014-15 forecast contributed assets is based on adjusted dwelling growth as discussed in the demand section. In 2013-14, a further increase of 2.5% was assumed. QUU has not adjusted the forecasts made in the 2011-12 budget for donated assets.

Capital (Cash) Contributions

QUU noted that the actual capital contributions for Brisbane in 2010-11 were higher than forecast in the August 2011 submission but lower than budget. For 2011-12, revenue for Brisbane was tracking 67% below budget, and a reduction of $9 million was forecast. However, QUU noted that the BCC incentives offered for early payment might lead to revenue levels for 2011-12 closer to that originally budgeted.

QUU noted development in Ipswich has slowed significantly, leading to lower contributions than budget and forecast in 2010-11. Ipswich revenue for 2011-12 was reforecast twice during the year, with a total reduction of $13.5 million based on the actual revenue continuing to decline below budget over the year. QUU noted that this reduction was supported by the OESR residential land development activity profile, which shows reduced developer activity in the region.

Since the 2011-12 submission, QUU has developed a common model to forecast capital contributions across its service areas from 2012-13, based on the following:

(a) charge rates – approvals pre 1 July 2011 are charged under planning scheme policy (PSP) charge rates; approvals post 1 July 2011 are charged under maximum allowable charge (MAC) rates, approvals post 1 July 2013 will be charged under utility-based model (UBM) charge rates. QUU noted that the charging regime associated with the change to a UBM for development assessment from 1 July 2013 is yet to be determined. However, MAC rates will continue to apply to other non-water and sewerage networks until 30 June 2014.

    For approvals after 1 July 2014, QUU used a set of charges based on the draft priority infrastructure charges (PIP) which were developed in preparation for their introduction on 1 July 2011 prior to the State government introducing the MAC. QUU has assumed that these UBM charge rates are 66% of the PIP charge rates.

    Both the PSP and PIP charges vary depending on where the development is to occur, as they are calculated charges based on the infrastructure required to service the charge area. The MAC varies only across the participating council areas depending on the allocation of the total MAC between the different networks. QUU noted that the allocations were set between QUU and its participating councils;

(b) growth – initial development growth is taken from the draft PIPs, and then adjusted where PSP and PIP charge areas differ. For the purpose of estimating revenues from MACs, the total council PIP demand is split into residential [1 and 2 bedrooms and 3-plus bedrooms] and non-residential demand categories which match the MAC rates; and

(c) a profile of payment of charges following approval. Annual revenue from each charge rate is estimated based on a four-year potential payment period following approval to develop and the estimated portion paid in each of these four years.

QUU noted that as the PIP demand is linked to the OESR medium (2008) population series, the revenue forecasts were adjusted [downwards] using the OESR low (2011) population series. The adjustment followed the approach adopted for pricing purposes to adjust the medium dwelling series to reflect a low dwelling series.

The revenue forecasts were then reviewed against previous years' revenue and the sharp drop in Queensland dwelling approvals and commencements as published by the ABS. As a result a further (second) downwards adjustment was made to the revenue.

In response to queries on the further downwards adjustment, QUU stated that the percentage adjustments vary by council area and were based on limiting the forecast to lower than the 2010-11 actuals in total, given the emerging data on dwelling approvals and commencements from the ABS and lower forecast revenues in 2011-12. The major reduction was in Ipswich due to lower growth being experienced rather than the higher growth being forecast by the OESR. In particular:

(a) QUU compared its own data on new connections in 2011-12 with available data on development activity on lot certification and new lot sales in the OESR residential land development activity profiles. QUU noted that connections growth in 2011-12 was lower than that implied by the OESR data, and of a broadly similar quantum to the further adjustment applied by QUU. For example, actual connections in Ipswich were 78% lower than the OESR data would imply, and QUU applied a 67% adjustment factor to Ipswich growth; and

(b) QUU also compared the actual revenue collected in 2012-13 to date from developer charges with that budgeted for 2012-13.

For Brisbane, actual revenues during the first four months of 2012-13 were much lower than budgeted. While Brisbane has in the past had a large collection of revenues late in the year, driven mainly by a large discount offered by BCC, this year BCC does not offer this discount. As a result, QUU does not expect a large increase in revenue late in the year.

For Ipswich, QUU noted that receipts are tracking well below the budget, indicating that the budget figure is now highly optimistic. Therefore, QUU has made a further adjustment to better reflect the actual revenue collected.

Authority's Analysis

2011-12 Report

In its 2011-12 Final Report, the Authority noted that forecasting of capital contributions and contributed assets is a difficult exercise, but that accuracy is particularly important when the revenue offset method is adopted (as by QUU) and under annual pricing.

The Authority drew from property economics, existing approaches and relevant legislation to identify a range of factors that may influence the timing, nature and extent of contributions[17]. The Authority was unable to determine the relevance of these factors due to a lack of data. Therefore, the Authority accepted the entities' estimates of contributed assets and capital contributions for 2011-12 in its Final Report.

The Authority proposed to progress this issue in conjunction with the entities and to report on progress in its next price monitoring review. The Authority also accepted Unitywater's suggestion that a workshop be held to progress this issue (at an appropriate time).

Workshop

As part of the 2012-13 review, the Authority asked its consultants SKM to recommend improvements to progress the forecasting of capital contributions. In considering this issue SKM was required to convene and facilitate a workshop with the entities on this issue, noting the approaches adopted by the entities to date, industry best practice, the approaches in other jurisdictions and the availability of information.

SKM held a workshop with the entities. SKM provided an overview of the approaches previously recommended by IPART and the Essential Services Commission (ESC) to calculate charge rates. Stakeholders noted that these approaches (to calculate the charge) do not necessarily assist in forecasting revenues from contributions in 2012-13, as the charge rate is already known.

Stakeholders at the workshop canvassed a range of methods for forecasting contributions:

(a) using existing charge rates and growth consistent with that used for pricing purposes. Stakeholders noted that any errors in OESR growth projections do not materially affect the revenue forecasts from fixed and volumetric water charges as there is a large component of existing connections and usage. However, as revenues from contributions are solely derived from growth, any errors can materially affect forecasts of contributions revenue;

[17] These factors include population growth, the availability of land and subsidies for development, general economic activity, employment growth, interest rates and consumer confidence, and the triggers for payment of contributions.

(b) using existing charge rates and drawing on building approvals as a leading indicator of growth. This was the QUU method for forecasting revenues for Brisbane in 2011-12.

The Authority notes that the ABS also uses approvals as a key indicator for dwellings growth which then feeds into estimating population growth[18]. However, the ABS is oriented towards population estimates [also using Medicare enrolments and electoral roll data] and has an extensive validation procedure using regional ABS staff and data from local councils on whether approvals are completed;

(c) using existing charge rates and longer term growth estimates, including those used for capital planning purposes (including from councils planning schemes) and/or the growth forecasts used in setting the charge. This is the current QUU approach in forecasting revenues for all council areas. This approach considers the availability of land and subsidies for development. Growth estimates of this kind tend to rely on OESR projections, with adjustments for local circumstances and planning models.

At the workshop, stakeholders noted that this approach has the advantage of using longer term growth data consistent with capital planning. However, it has the disadvantage of not reflecting current expectations (although adjustments can be made for these as in the QUU model);

(d) using an econometric growth model, based on statistical analysis of historical data on capital contributions revenues and leading and lagging indicators. Stakeholders noted that such a model would require historical data that is not available, could be complex and costly to develop and may not add to the accuracy of current forecasts;

(e) general approaches as applied in other jurisdictions. An ESC staff paper (2012) has noted that 'a simplified means of new customer contributions revenue forecasting commonly adopted by regulated networks and their regulators is to forecast NCC revenue using the historical share of gross capex that has been recovered through customer contributions'; and

(f) a hybrid approach, drawing on a number of these methods, and for scenario testing.

There was no clearly superior method for accurately forecasting revenues from capital contributions identified at the workshop that could be currently implemented in SEQ.

Further Issues

In considering this issue further, the Authority also notes that:

(a) forecasts of contributed assets appear to be more stable than forecasts of cash capital contributions and forecasting of the latter is the more difficult exercise;

(b) the impact of forecasting error would likely be reduced under an asset offset approach and a multi-year approach to price setting; and

(c) conceptually, all new connections derive from a building approval. The growth forecasts adopted for forecasting revenue from access charges and for forecasting revenue from capital contributions should be consistent.

[18] The ABS assumes that the percentage growth in building approvals equates to the percentage change in dwellings for the purposes of estimating population change. Further, that population growth lags building approvals – the ABS assumes that it takes around six months for a house to be completed and around 6-12 months for a flat/unit/apartment to be completed (pers. comm. T Dyson, ABS Regional Population Unit, 2012).

In relation to QUU's current approach, the Authority notes that QUU has considered the need for consistency in growth estimates in its first adjustment for the low dwellings series. Further, QUU has considered the availability of land and subsidies for development through the use of growth forecasts that are compatible with its long-term infrastructure planning process.

However, QUU has made a further (second) downwards adjustment to revenues. This is not consistent with its approach to forecasting growth for pricing or capital planning.

SKM considered that this further downward adjustment should be removed. The Authority notes that removing the downward adjustment factor as recommended by SKM would result in total capital contributions of $106.56 million – some 15% higher than the average capital contributions over 2009-12 of $92.89 million. Compared with that proposed by QUU, SKM's recommendation of $106.56 million is some 30% higher.

The Authority notes that there is no evidence that SKM's method would result in a more robust forecast. Therefore, at this stage, the Authority is not inclined to adjust QUU's estimate in its estimate of the MAR.

As a further measure, the Authority has estimated the forecast that would apply using the average approach adopted in other jurisdictions (see (e) above). This has resulted in an estimate of revenues from capital contributions between $134 and $211 million, driven by the marked increase in capital expenditure to be commissioned in 2013-14. QUU's estimate of $82 million is more in line with historical levels and is significantly lower than the average historical percentage.

The Authority considers there is insufficient data to assert the suitability of an alternative method for forecasting revenues from contributed assets and capital contributions.

Conclusion

On the information presented to the Authority, and consistent with the outcomes from the workshop, there does not appear to be a clearly superior method for accurately forecasting the revenues from capital contributions for SEQ retail water entities. The Authority will continue to monitor this issue as data develops over the course of business.

The Authority notes that it has recommended (section 1.5 above) that the entities develop more sophistication in their demand forecasting for revenue/pricing purposes. There are a range of forecasting approaches that could be developed by the entities for this purpose. This work should also encompass the revenues from capital contributions.

The Authority has accepted QUU's 2012-13 forecasts of revenues from contributed assets and capital contributions.

1.8 Rolling Forward the RAB

In accordance with the Ministerial Direction and normal regulatory practice, the initial RAB is rolled forward to account for capital expenditure, inflationary gain, depreciation (return of capital) and disposals.

The Authority generally applies a straight line approach to depreciation. Under the Direction, the Authority must also take into account, for the period 1 July 2008 to 30 June 2010, evidence that depreciation has been calculated using the Minister's advised RABs allocated to council assets and existing useful lives.

Under the roll forward, indexation and depreciation are calculated on the assumption that forecast capital expenditure and disposal occur evenly throughout the year.

For indexation, the Authority is required under the Direction to use the annual June to June ABS CPI (all groups, Brisbane) for 2008-09 and 2009-10. Under the Information Requirements for 2012-13, the ABS CPI (all groups, Brisbane) is used for indexation in 2010-11 and 2011-12. The indexation from 1 July 2012 to 30 June 2015 is 2.48% per annum – the forecast of CPI that is consistent with the benchmark return on capital.

As noted above, actual capital expenditure from 1 July 2008 to 30 June 2010 is included in the RAB, while from 1 July 2010 only prudent and efficient capital expenditure is to be rolled forward. Further, where the entity chooses to apply the asset base offset approach, contributed assets and capital contributions are deducted from the assets to be paid for by users.

QUU's Submission

QUU adopted a straight line approach to depreciation based on existing asset lives contained in its fixed asset registers.

QUU submitted that the indexation used to roll forward the RAB followed the approach set out in the Information Requirements for 2012-13. Indexation in 2008-09 and 2009-10 was based on the June to June ABS CPI (all groups, Brisbane) of 2.0% and 3.2% respectively. For 2010-11 and 2011-12, the March to March ABS CPI of 3.6% and 1.3% was used. For the forward period from 2012-13 onwards, QUU used 2.48%.

Disposals for 2008-09 and 2009-10 were based on councils' written down asset values, adjusted to reflect their RAB value. Disposals of $20.29 million in 2010-11 are expected as a result of the damage caused by the January 2011 floods (capital expenditure in the table below is net of this amount). From 1 July 2011 onwards, no disposals have again been forecast in accordance with the Information Requirements for 2011-12 which specifies that, unless disposals are of material value, they may remain in the RAB[19].

QUU's RAB roll-forward for water and wastewater are shown in the table below.

[19] In its Information Requirements for 2011-12, the Authority noted that (individual) assets retired prior to being fully depreciated could remain in the RAB and be depreciated over their remaining life, provided that the individual asset does not account for more than 5% of the asset class.

Table 1.55: QUU Asset Base Roll Forward – Water ($m)

	2008-09	*2009-10*	*2010-11*	*2011-12*	*2012-13*
Opening RAB	1,560.327	1,641.670	1,733.817	1,806.380	1,856.892
plus Capital expenditure	90.918	61.156	59.192	79.000	104.206
plus Indexation	32.118	53.512	63.486	24.366	47.343
less Depreciation	-41.692	-42.933	-50.116	-52.853	-56.803
Establishment Costs		20.412			
Closing RAB (QUU)	**1,641.670**	**1,733.817**	**1,806.380**	**1,856.892**	**1,951.638**

Note: Capital expenditure is net of disposals. Data to three decimal places as per QUU submission. Source: QUU (2012).

Table 1.56: QUU Asset Base Roll Forward – Wastewater ($m)

	2008-09	*2009-10*	*2010-11*	*2011-12*	*2012-13*
Opening RAB	2,384.723	2,408.830	2,529.558	2,584.831	2,642.386
plus Capital expenditure	71.476	122.691	72.995	137.224	250.034
plus Indexation	48.485	79.077	92.490	35.025	68.632
less Depreciation	-95.855	-99.744	-110.212	-114.694	-122.962
Establishment Costs		18.704			
Closing RAB (QUU)	**2,408.830**	**2,529.558**	**2,584.831**	**2,642.386**	**2,838.091**

Note: Capital expenditure is net of disposals. Source: QUU (2012).

Authority's Analysis

The Authority applied a straight line approach to depreciation as per the SEQ price monitoring framework. The indexation applied by the Authority under the Information Requirements is consistent with QUU's.

The Authority's opening RAB for water and wastewater activities as at 1 July 2012 ($4,499.47 million) was slightly higher than QUU's estimate ($4,499.28 million). The difference appears to relate to estimates of depreciation and will be further investigated for the Authority's final report.

Table 1.57: Authority's Asset Base Roll Forward – Water ($m)

	2008-09	*2009-10*	*2010-11*	*2011-12*	*2012-13*
Opening RAB	1,560.33	1,641.70	1,733.27	1,805.87	1,856.91
plus Capital expenditure	97.17	85.16	60.18	79.00	100.61
plus Indexation	32.12	53.51	63.46	24.36	47.30
less Depreciation	-41.67	-43.50	-50.05	-52.32	-55.69
less Disposals	-6.25	-3.59	-0.99	0.00	0.00
Closing RAB	**1,641.70**	**1,733.27**	**1,805.87**	**1,856.91**	**1,949.13**

Source: QUU (2012), SKM (2011), QCA (2012).

Table 1.58: Authority's Asset Base Roll Forward – Wastewater ($m)

	2008-09	*2009-10*	*2010-11*	*2011-12*	*2012-13*
Opening RAB	2,384.72	2,408.68	2,528.99	2,584.39	2,642.55
plus Capital expenditure	85.33	157.01	97.56	137.22	245.54
plus Indexation	48.48	79.07	92.39	35.02	68.59
less Depreciation	-95.78	-100.16	-110.00	-114.08	-121.75
less Disposals	-14.07	-15.61	-24.57	0.00	0.00
Closing RAB	**2,408.68**	**2,528.99**	**2,584.39**	**2,642.55**	**2,834.93**

Source: QUU (2012), SKM (2011), QCA (2012).

Table 1.59: Comparison of Opening RABs

	2008-09	*2009-10*	*2010-11*	*2011-12*	*2012-13*
QUU Proposed Opening RAB	3,945.05	4,050.50	4,263.38	4,391.21	4,499.28
QCA Opening RAB	3,945.05	4,050.38	4,262.47	4,390.26	4,499.47
Difference	**0.00**	**(0.12)**	**(1.11)**	**(0.95)**	**0.19**

Source: QUU (2012), QCA (2012).

The Authority's estimate of the regulatory opening asset base for price monitoring purposes in 2012-13 is slightly higher than that of QUU.

The Authority's estimate of the closing asset value as at 30 June 2013 is $1,949.13 million for water and $2,834.93 million for wastewater.

1.9 Return on Capital

Under the Ministerial Direction, the Authority was required to advise the entities by 1 March 2011 and 1 March 2012 of the weighted average cost of capital (WACC) benchmark for 2011-12 and 2012-13 respectively.

After taking into account all relevant issues, the Authority advised the entities on 15 March 2011 that it intended to adopt a WACC of 9.35% for the three-year period 2010-11 to 2012-13. The reasons for this decision are set out in Appendix B in the Authority's Final Report for 2010-11.

QUU's Submission

QUU adopted the Authority's advised WACC benchmark of 9.35% in its 2012-13 submission. QUU noted it remained concerned about a number of the key parameters in the Authority's estimate. QUU noted that its response to the Authority Draft Report for 2010-11 highlighted these concerns, which were supported by the advice of an independent expert.

QUU noted that it would address these outstanding issues in consultation with the Authority as part of the Authority-wide review of the WACC which is scheduled for completion within the next 12 months.

Authority's Analysis

As per the agreed price monitoring framework and the Authority's advice to the entities of 15 March 2011, the Authority has adopted a WACC of 9.35% for 2012-13. This is the same WACC as adopted by QUU.

The Authority's estimate of the return on capital resulting from the 9.35% WACC and its estimate of the asset base is set out below. The difference in QUU's estimated return on capital arises from its view of the RAB to which the WACC is applied, rather than the WACC applied. The Authority's RAB is slightly higher than that of QUU (as noted above).

Table 1.60: Return on Capital ($m)

	Water 2011-12	*Wastewater 2011-12*	*Water 2012-13*	*Wastewater 2012-13*
Return on Capital (QUU)	172.51	248.96	178.49	258.75
Return on Capital (QCA)	174.35	251.59	178.37	258.64
Difference	**1.84**	**2.63**	**-0.12**	**-0.11**

Source: QUU (2012) QCA (2012).

The Authority has adopted a WACC of 9.35% in accordance with the Ministerial Direction. This is consistent with the approach adopted by QUU.

1.10 Operating Expenditure

Operating costs include the cost of purchasing bulk water, as well as both retail and distribution costs such as materials and services (including chemical and electricity costs), employee, corporate and customer service costs.

The Ministerial Direction requires the Authority to recognise the Government's policy that the prices charged by the SEQ WGM for bulk water storage, treatment and delivery are to be passed through to customers in full.

The Ministerial Direction also requires the Authority to accept the operational constraints imposed by the SEQ Urban Water Arrangements Reform Workforce Framework 2010.

In July 2012, the *South-East Queensland Water (Distribution and Retail Restructuring) Amendment Act 2012* revoked the Workforce Framework.

The Authority engaged Halcrow to review the prudency and efficiency of QUU's forecasts of operational expenditure for its water and wastewater activities from 1 July 2012.

QUU's Submission

QUU proposed $535.18 million of operational expenditure for 2012-13 – $382.22 million for water and $152.97 million for wastewater.

QUU allocated its operational costs to drinking water, wastewater and trade waste services. QUU noted that it had made progress in separating the cost of trade waste from domestic sewage using a sewage costing model (this assigns costs based on flows and loads contributed by each customer group). However, this information was only available for the Brisbane City and Ipswich regions.

Operational Budget Development

QUU has continued to adopt a structured approach to the development of its operational expenditure budget for 2012-13, framed by its 2012-13 budget framework and Budget Guideline.

The initial budgets were prepared by managers on a 'business as usual expenditures' basis for each service area, in compliance with QUU's Budget Guideline which sets out the timetable, key parameters and process for the budget preparation. A review was then conducted by executive management, taking into account historical trends and forecasts, efficiencies and new initiatives.

Operational Expenditure forecasts

QUU's forecast total operational expenditure over the period 2011-12 to 2014-15 for water and wastewater are set out in Tables 1.61 and 1.62 respectively.

Table 1.61: QUU's Forecast Water Operating Costs 2011-15 ($m)

	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*
Bulk water costs	219.05	225.45	269.82	314.60	361.87
Employee expenses	34.68	33.35	41.96	42.68	44.28
Contractor expenses	0.94	0.33	0.23	0.24	0.25
GSL Payments	0.00	0.00	0.00	0.00	0.00
Electricity charges	1.06	1.14	1.66	1.78	2.00
Sludge handling costs	0.00	0.00	0.01	0.01	0.01
Chemicals costs	0.16	0.10	0.08	0.08	0.09
Other materials and services	43.14	59.76	68.03	63.95	68.42
Licence or regulatory fees	0.41	0.36	0.42	0.43	0.45
Corporate Costs	na	0.00	0.00	0.00	0.00
Non recurrent costs	0.00	0.31	0.00	0.00	0.00
Indirect taxes	0.00	0.00	0.00	0.00	0.00
Total Operating Costs	**299.45**	**320.79**	**382.22**	**423.78**	**477.37**

*Note: Shaded data reflects QUU's forecasts for 2011-12 in its 2011-12 price monitoring submission. * Estimated actual. Source: QUU (2012), QUU (2011).*

Table 1.62: QUU's Forecast Wastewater Operating Costs 2011-15 ($m)

	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*
Bulk water costs	0.00	0.00	0.00	0.00	0.00
Employee expenses	57.48	50.96	54.82	55.67	57.76
Contractor expenses	0.88	0.03	0.05	0.05	0.05
GSL Payments	0.00	0.00	0.00	0.00	0.00
Electricity charges	10.68	9.43	9.49	10.11	11.32
Sludge handling costs	8.94	7.39	8.41	8.77	9.14
Chemicals costs	4.35	3.00	3.46	3.60	3.76
Other materials and services	73.70	70.07	76.15	77.75	86.25
Licence or regulatory fees	0.64	0.59	0.59	0.61	0.62
Corporate Costs	na	0.00	0.00	0.00	0.00
Non recurrent costs	0.00	3.67	0.00	0.00	0.00
Indirect taxes	0.00	0.00	0.00	0.00	0.00
Total Operating Costs	**156.67**	**145.15**	**152.97**	**156.55**	**168.90**

Note. Shaded data reflects QUU's forecasts for 2011-12 in its 2011-12 price monitoring submission.
** Estimated Actual. Source: QUU (2012), QUU (2011).*

Variation in 2011-12 costs from 2011-12 Submission

QUU submitted that the significant changes to its previously forecast 2011-12 cost estimates in QUU's 2011-12 submission include:

(a) a reduction of $7.8 million in employee costs;

(b) a increase of $6.4 million in bulk water costs due to higher water usage and increased non-revenue water;

(c) a reduction in electricity, chemical and sludge costs of $4.1 million; and

(d) an increase in the expensed portion of the capital programme from $16.6 million in the budget to the forecast of $21.8 million (an additional $5.2 million).

QUU noted that, when non-recurrent flood-related costs of $3.98 million are excluded[20], operational expenditure in 2011-12 increased by $5.8 million from that previously submitted largely as a result of increased water usage. QUU submitted there was no material difference between the 2011-12 forecast submitted last year and this year's 2011-12 forecast.

Business-as-usual operating cost increases in 2012-13

QUU applied generic cost indices and geographic-specific growth factors to forecast certain business as usual operating costs (see table below) and to cross-check bottom-up cost estimates.

[20] Flood costs in 2011-12 relate to asset damage at Oxley STP that has resulted in higher sludge handling costs and reduced co-generation of electricity and replacement of small assets that fall below the capitalisation threshold. QUU noted that it was still finalising its insurance claims for the flood and it has not included any flood-related operating expenses in its 2012-13 operating budget.

Table 1.63: Operating Cost Indexes and Growth Factors for BAU Expenditure

	Cost Index			*Annual Growth Factors*				
	2012-13	***2013-14***	***2014-15***	***Brisbane***	***Ipswich***	***Lockyer Valley***	***Scenic Rim***	***Somerset***
Direct Labour	4.25%	3.70 %	3.80%	0.0%	0.0%	0.0%	0.0%	0.0%
Bulk Water	As per Bulk Price Path							
Electricity	-8.50%*	4.85%	10.32%	Aligned to percentage change in dwellings				
Chemicals	2.50%	2.50%	2.50%	Aligned to percentage change in dwellings				
Sludge Handing	2.50%	2.50%	2.50%	Aligned to percentage change in dwellings				
Other Costs	2.50%	2.50%	2.50%	0.0%	0.0%	0.0%	0.0%	0.0%

** QUU's submission stated that this cost index excludes carbon price. Source: QUU (2012).*

QUU submitted that its business as usual increase in operating costs for 2012-13 (including non-regulated costs) is $18.73 million, comprised predominantly of:

(a) standard EBA Increases ($4.6 million) and parity process/band increments ($1.6 million);

(b) reduction in labour capitalisation ($4.3 million) – this leads to an increase in operating costs;

(c) land tax ($2.3 million), capital program recovery ($1.8 million), Transitional Services Agreements ($1.7 million) and other operating costs ($2.1 million).

Efficiency Gains

QUU submitted that it is committed to the delivery of services that are valued and trusted by its customers and the community, while limiting water price increases through the identification and extraction of ongoing efficiencies. It submitted that it was able to achieve cost savings of $50 million in 2010-11 and sought a $12.9 million budget reduction from business-as-usual in expenditure in 2011-12.

For 2012-13, QUU submitted that it has identified a total of $8.2 million (or 3.2% of non-bulk business-as-usual costs) in efficiency gains. The efficiencies included by QUU in its operating budget for 2012-13 are compared with those identified by its consultants Third Horizon[21] in the table below.

[21] In 2011-12, QUU commissioned a review of its business model by independent consultancy Third Horizon which included the development of a recommended organisational "day two" business model. This was conducted in two stages – with stage one focusing on a review of existing practices, identification of preliminary improvement opportunities and prioritisation of stage two works. Stage two included a rigorous validation of prioritised opportunities, development of high level business cases, and implementation recommendations.

Table 1.64: QUU Efficiency Gains 2012-13

Efficiency 2012-13	*QUU 2012-13*	*Third Horizon Review Target 2012-13*
Procurement initiative	$3,200,000	$3,200,000
Increased vacancy rate	$1,910,000	$500,000
Defined benefit superannuation de-risked portfolio	$1,140,000	-
Afternoon shift – changed conditions and productivity gain	$876,000	$800,000
Electricity management	$400,000	$400,000
Call centre – net efficiencies of transfer in-house	$387,000	-
Reduction in management roles	$302,000	-
Biosolids – strategy under development	-	$1,800,000
Total	**$8,215,000**	**$6,700,000**

Source: QUU (2012).

QUU noted that the Authority in its 2010-11 Final Report set out cumulative efficiency targets for 2011-12 and 2012-13, of $9.49 million and $14.15 million respectively, representing a reduction of 4% and 6% to QUU forecasts.

QUU submitted that it set an internal efficiency target of $12.9 million in 2011-12 and has sought to achieve efficiency gains of $8.2 million for 2012-13. QUU submitted that it is on target to achieve efficiencies of $21.1 million in 2012-13, well above the Authority's target of $14.15 million.

QUU provided information on its performance against some of its 2011-12 budgeted efficiencies in the table below.

Table 1.65: QUU Performance against 2011-12 Efficiency Targets

Single item efficiency reductions greater than $500,000	*2011-12b Efficiency Target*	*2011-12b[1]*	*2011-12f*	*2012-13b*
Accommodation and rent reductions	$1,159,000	$5,427,505	$4,091,180	$4,857,416
Overtime management improvements (operations)	$526,000	$5,566,635	$6,018,635	$5,337,356
Reductions in chemical usage (including polyelectrolyte)	$607,000	$4,604,102	$3,184,367	$3,588,869
Reduction in external consultancies (operations)	$923,000	$1,612,000	$1,476,800	$1,820,000

Note: Does not add to $12.9 million, as these are the single item efficiencies greater than $0.5m. b: budget, [1]: Includes efficiencies, f: forecast. Source: QUU (2012).

New Initiatives

In addition to identifying efficiency gains in its 2012-13 submission, QUU also identified a series of new initiatives. These are projects that represent step changes in expenditure from the previous year and are expected to be operational for a limited number of years. QUU submitted that these projects have two forms, where investment is required prior to achieving efficiency gains and where the initial 2010-11 budget excluded projects later found to be necessary to meet customer service levels or regulatory requirements.

QUU separated out new initiatives from its business-as-usual expenditure, to allow for a like-for-like year-on-year comparisons of budget cost drivers. The total expenditure relating to new initiatives in 2012-13 is $37.0 million. The major initiatives are set out in the table below. The ICT separation program is discussed in further detail below.

Table 1.66: QUU New Initiatives ($m)

Initiative	*2011-12b*	*2012-13b*
ICT Separation Program[#]	-	9.96
Planned Maintenance –incremental increase	-	7.8
Call Centre[1] – labour	-	2.2
Utility Model Development	-	0.78
Payroll Services Project	-	0.6
ICT Investment Program[2#]	6.0	4.3
Sewerage Overflow Management	3.3	1.8
QCA Pricing Proposal Submission	3.0	1.8
Accommodation Relocation Projects	0.95	0.59
Safety Policies and Management System	0.84	1.1
Improved Customer Communications	0.67	0.22
Sewer Condition Testing	0.67	0.67
Other	3.99	5.17
Total	**19.42**	**36.987**

Notes: [1] Offset by removal of Call Centre transitional service agreement. [2]: Management of purchase of new systems. [#]: These projects are included as expensed items from the capital program. b = budget Source: QUU (2012).

The interaction of QUU's proposed efficiency gains, non-recurrent expenditure and initiatives on 2012-13 non-bulk operating costs can be seen in the table below.

Table 1.67: QUU Non-Bulk Operating Cost Changes 2011-12 to 2012-13*

	$'000
2011-12 Forecast Operating Costs[a]	*$241,596*
less Flood Costs	-$3,981
Base forecast	*$237,615*
plus Business as Usual[b] Increase	$18,726
less Efficiencies[c]	-$7,828
2012-13 Base budget	*$248,513*
plus Net New Initiatives[d]	$17,955
2012-13 Budgeted Operating Costs	**$266,468**

*Note: * includes non-regulated costs. [a] reflects indexation and escalation. [b] includes new initiatives for 2011-12. [c] excludes $387,000 in call centre savings. [d] includes $387,000 in call centre savings. QUU (2012).*

ICT Separation Program

At the time of separation from councils, QUU contracted with BCC under a Transitional Service Agreement for the delivery and management of ICT until 30 June 2013. QUU submitted that BCC will not provide services to QUU beyond the end of the current agreement.

As a result, QUU has established a joint program of work to design and initiate its technical separation of technology and systems from BCC's ICT environment. The objective of the ICT Separation Program is to deliver technically separate ICT systems from BCC, with no ongoing reliance on BCC technical resources for the delivery of ICT services.

The cost of the ICT Separation Programs is a key driver of both operation and capital expenditure in 2012-13 (see table below). QUU has put in place program management plans and risk management registers to assist in delivering the program on time and on budget. To meet the timeframe, QUU has used internal and external resources including contractors. BCC will also provide resources to enable separation on an as-needed basis to the program during its lifecycle.

Table 1.68: QUU ICT Separation Program

	2011-12f	*2012-13b*	*2013-14f*
Capital Expenditure	$1,370,000	$13,677,000	$1,960,000
Operating Expenditure	$6,764,000	$9,961,000	$386,000
Total ICT Separation	**$8,134,000**	**$23,638,000**	**$2,346,000**

Note: b: budget f: forecast. Source: QUU (2012). Source: QUU (2012).

Authority's Analysis

The Authority notes that, overall, QUU has forecast its total operating cost (including bulk water costs) will increase from $465.94 million in 2011-12 to $535.18 million in 2012-13 and then to $646.26 million in 2014-15; an average annual increase of 11.5%.

In its review of prudency and efficiency of operating costs, the Authority draws on:

(a) high-level benchmarking of operating costs;

(b) a review of a sample of cost categories, including the cost and growth indices applied; and

(c) the efficiency targets set by the Authority in its 2010-11 Final Report.

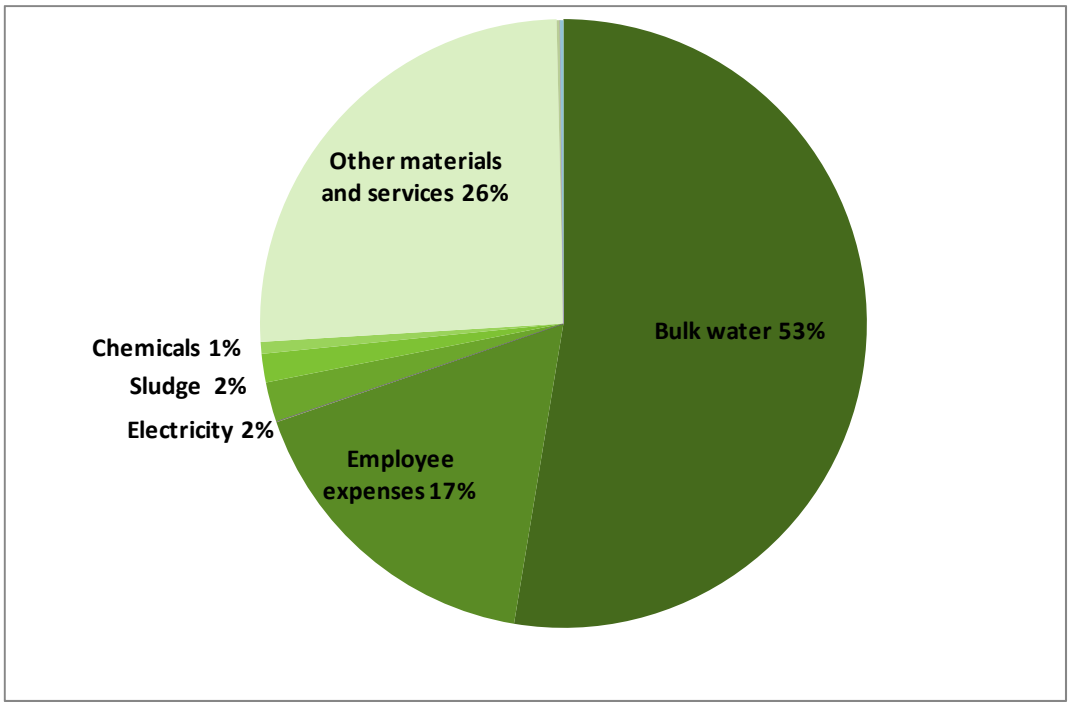
The Authority engaged Halcrow to assist in its review of the prudency and efficiency of operating expenditure. The assessment takes into account relevant service standards, revised demand forecasts and the potential for efficiency gains and economies of scale.

Adequacy of Operational Expenditure Data Provision

Prior to assessing the prudency and efficiency of proposed operational expenditure, Halcrow reviewed whether QUU provided comprehensive and accurate information in its submission.

Halcrow found the QUU had provided a detailed information return for 2012-13, with the exception of corporate cost where costs had not been disaggregated. Instead, corporate costs are captured under the employee costs and other materials and services categories. QUU advised that it is unable to disaggregate corporate costs from these categories.

Chart 1.6: QUU's Operating Costs 2011-12 to 2014-15



Note: Corporate costs reflect labour corporate allocations and materials and services corporate allocations as defined by QUU. This does not align with the Authority's definition of corporate costs. Source: QUU (2012).

Operational Budgeting

The Authority notes that in 2012-13 QUU did not conduct any benchmarking of the key components of its operating budget (this was done in 2011-12).

Given the large increases being proposed, the Authority recommends that QUU recommence benchmarking as an integral part of its budget process, so as to inform decision making at all levels of the organisation. This should be done at an aggregate (overall) level of non-bulk operating costs, as well as for each of the key components of non-bulk operating costs.

As discussed further below, QUU should only exclude specific non-recurrent expenses where this would assist in a more appropriate comparison with benchmark entities.

Prudency and Efficiency

The Authority benchmarked QUU's 2012-13 aggregate operating costs for water and wastewater against Unitywater and other distribution/retail water utilities (see table below).

Table 1.69: QUU Operating Cost Benchmarks

Metric Type	*Description*	*QUU($)*	*Unitywater ($)*	*Sydney Water Corporation ($)*	*Yarra Valley Water ($)*
Customers	Total costs per connection	1,016	910	486	809
	Water costs per connection	726	593	211	-
	Wastewater costs per connection	306	305	282	-
Network	Total costs per km of pipeline	30,001	23,730	19,778	29,022
	Water costs per km of pipeline	43,340	30,400	18,429	-
	Wastewater costs per km of pipeline	16,959	16,824	20,958	-
Volume	Total costs per ML of drinking water	4,091	4,277	2,046	4,132
	Water costs per ML of drinking water	2,921	2,787	890	-
	Wastewater costs per ML of drinking water	1,169	1,490	1,156	-

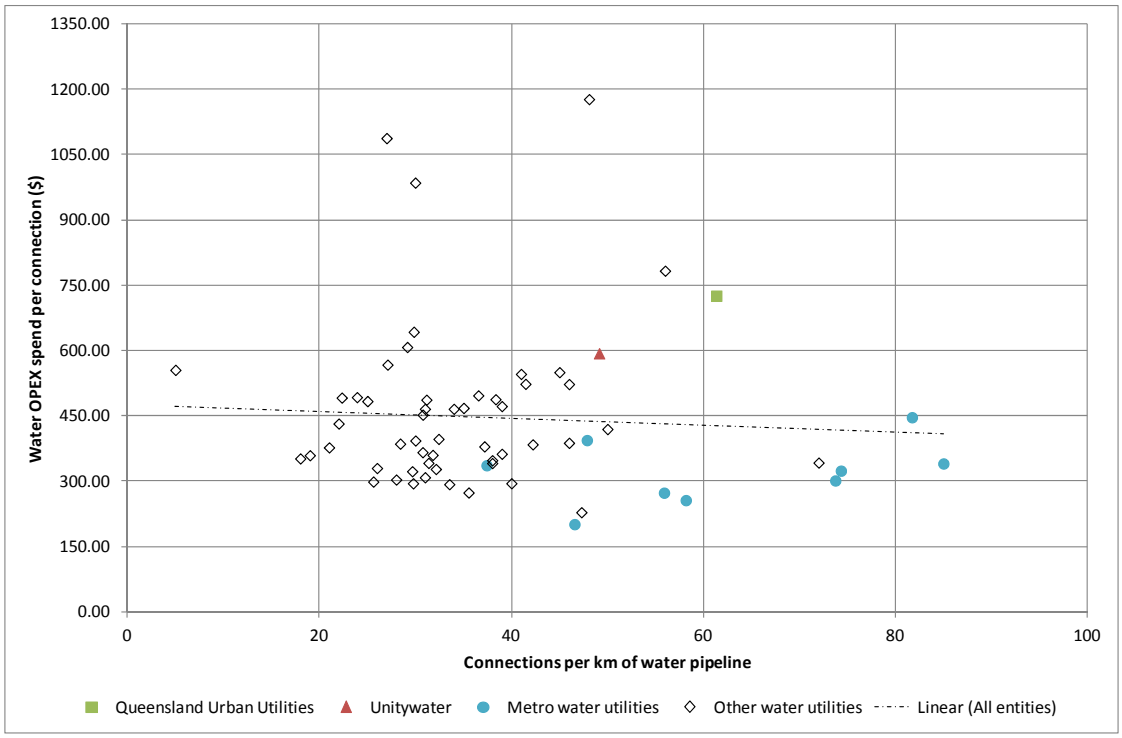
Note: Yarra Valley data sourced from its 2009-13 Water Plan which does not disaggregate operating costs by water and wastewater Source: QUU (2012) Unitywater (2012), Sydney Water Corporation (SWC 2012), Yarra Valley (2009),

Based on these metrics, the Authority notes that QUU's operating expenditure for water is consistent with Unitywater but higher than other comparable water utilities in Australia. For wastewater services, QUU's costs were consistent with Unitywater and other water utilities.

The Authority notes that, in assessing the operating costs of water utilities around Australia, comparing expenditure per connection will tend to favour the larger utilities that have a large customer base or higher density of connections. Therefore, QUU's relative performance was

also measured using both expenditure per connection and the number of connections per km (see graphs below).

Figure 1.2: Water Operational Expenditure



Note: CPI has been applied to other utilities data to inflate the costs contained in the 2010-11 NWC Performance Report to 2012-13. Source: NWC (2011).

The Authority notes that this approach also supports a finding that QUU's operating costs for water are higher than that Unitywater and other water utilities in other jurisdictions. Bulk water costs account for around half of QUU's operational expenditure for water in 2012-13.

The Authority notes bulk water charges are not controllable by QUU and are higher than interstate peers (see table below). There is currently insufficient information publicly available for rigorous benchmarking of water operating expenditure excluding bulk water costs to be undertaken, largely as a result of the different supply chains used interstate.

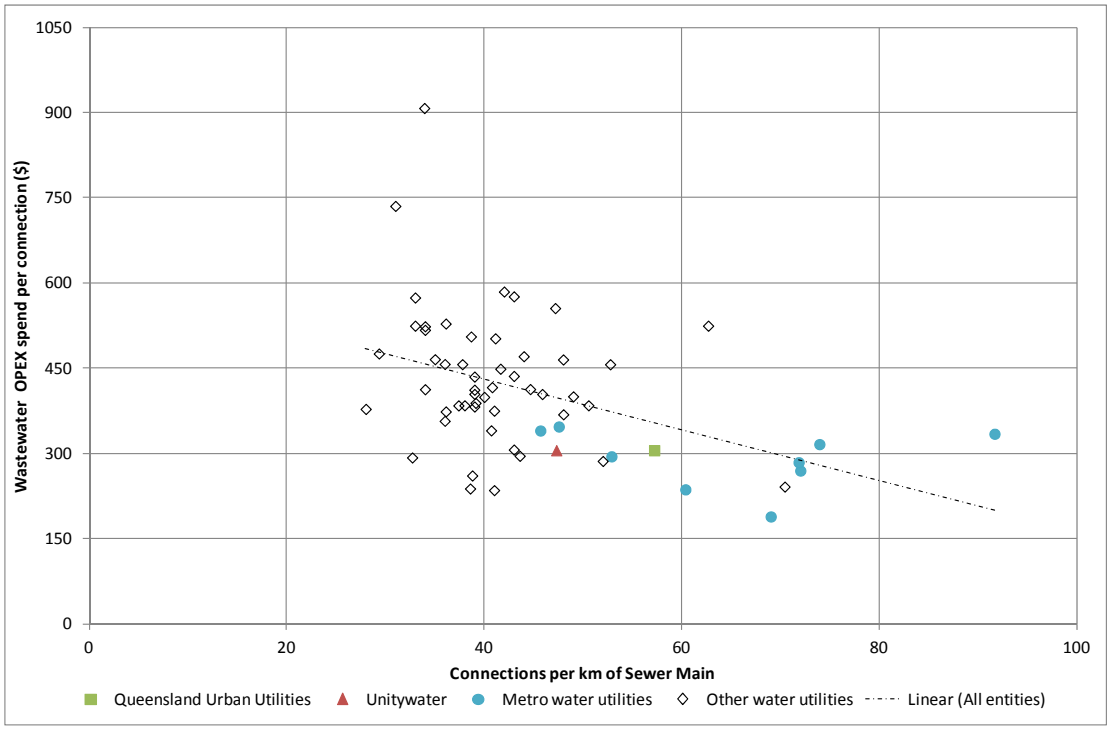
Table 1.70: Comparison of Bulk Water Costs

Water Utility/Area	*Bulk Water Cost ($/kl)*
Queensland Urban Utilities	2.061 (weighted average)
Brisbane City	2.057
Ipswich City	1.993
Lockyer Valley	2.250
Scenic Rim	2.357
Somerset	2.627
Sydney Water Corporation	0.778[b]
City West Water	1.416[a]
South East Water	1.375[a]
Yarra Valley Water	1.444[a]

Note: [a] includes headworks and transfer costs per kl and fixed charges translated into a per kL basis using bulk water demand data for 2012-13 from the ESC [b] based on total Bulk water expenditure inc Desal. Source: Sydney Water (2012), ESC (2009).

The Authority found QUU's wastewater costs to be generally consistent with similar sized water service providers (see chart below).

Figure 1.3: Wastewater Operational Expenditure



Note: CPI has been applied to other utilities data to inflate the costs contained in the 2010-11 NWC Performance Report to 2012-13. Source: NWC (2012).

In summary, the Authority notes that this high-level analysis shows QUU's operating costs for 2012-13 fall within a range of values bounded by other water utilities, and indicates the extent of operating efficiencies that could potentially be achieved.

Overall, QUU's operating costs for water appear higher than other utilities, although its operating costs for wastewater are comparable. This is a similar general finding as in previous years.

Sampled Costs

Halcrow selected a sample of operational expenditure for detailed review. The sample included the top 10% of operational expenditure by value in each activity and geographic area, over the forecast period. Halcrow reviewed employee costs, corporate costs, electricity, and other material and services costs.

In addition, the Authority has reviewed QUU's bulk water costs against forecast of demand and the bulk water price path. The total sampled expenditure therefore represents 98% of QUU's total operating expenditure.

Table 1.71: QUU Operating Costs Sampled for Review ($m)

Cost Centre	*2012-13*	*2013-14*	*2014-15*
Bulk water	269.82	314.60	361.87
Corporate Costs [a]	0	0	0
Employee costs	96.78	98.35	102.04
Electricity	11.15	11.88	13.32
Other materials and services	144.18	141.70	154.67
Total Sample	**521.93**	**566.53**	**631.90**
Total Expenditure	**535.18**	**580.33**	**646.26**

[a] *QUU did not separate out corporate costs from other cost elements. Source: QUU (2011), Halcrow (2012).*

Bulk Water Cost

The Authority examined QUU's tariffs and noted that the bulk water tariffs charged to customers are consistent with those charged by the Queensland Government. The Authority found that QUU's operating budget demonstrates that prices for bulk water storage, treatment and delivery are passed through to customers in full.

The review of QUU's demand forecasts for bulk water by SKM recommended adjustments to the volume of water sales forecast by QUU (see section 1.4) and made corresponding changes to bulk water purchases. The Authority has accepted SKM's recommendations and has adjusted QUU's operating costs associated with the purchase of bulk water for 2012-13 (see below).

The Authority's adjustments result in an increase in bulk water costs for water due to marginally higher estimates of demand.

Table 1.72: 2012-13 Bulk Water Costs

	QUU Submitted Bulk Water Cost ($m)	*QUU Submitted Demand (ML)*	*Revised SKM Demand (ML)*	*Unit Price ($/kL)*	*QCA Revised Bulk Water Cost ($m)*
Brisbane	225.79	109,761	110,069	2.057	226.43
Ipswich	31.87	15,988	15,969	1.993	31.83
Lockyer Valley	4.87	2,164	2,160	2.25	3.28
Scenic Rim	3.31	1,402	1,392	2.357	3.93
Somerset	3.99	1,519	1,497	2.627	4.86
Total	**269.82**	**130,834**	**131,087**		**270.33**

Source: SKM (2012), QUU (2012), QWC (2012).

Employee Costs

QUU budgeted $96.78 million in 2012-13 and 1,340 full time equivalents (FTEs) for the provision of water and wastewater activities. This is a 15.2% increase on the estimated actual expenditure in 2011-12 of $84.31 million.

QUU submitted that its business-as-usual budget was based on no growth in FTEs and labour cost escalation of 4.25% based on its Enterprise Bargaining Agreement (EBA). QUU further submitted that its budget included savings arising from an increased vacancy rate ($1.9 million), afternoon shift and productivity gain ($867,000) and a reduction in management roles ($302,000).

However, QUU identified significant growth in the FTEs and employee expenses attributable to new initiatives (table below). In particular, there are 29 new permanent staff for the call centre, and an increase of nine positions for increased maintenance activities in operations. QUU noted the 39 temporary FTEs for the ICT separation program will not be required at the completion of the project (expected to be at the end of 2012-13).

Table 1.73: Comparison of Full Time Equivalents (FTEs)

	2011-12 Budget	*2011-12 Forecast*	*2012-13 Base Budget*	*2012-13 New Initiative Permanent*	*2012-13 New Initiative Temporary*	*2012-13 Budget*
Office of the CEO	14.7	13.3	11.5	*1.3*	*3.0*	15.8
Workforce Capability	32.5	33.6	33.5	*4.8*	-	38.3
Corporate Services	121.8	91.3	90.3	-	-	90.3
Finance	41.3	44.3	45.6	*-1.0*	-	44.6
ICT	34.0	34.0	46.0	*3.0*	*12.0*	49.0
ICT Separation	-	-	-	-	*39.0*	39.0
Operations	865.8	896.6	891.6	*9.0*	*3.0*	900.8
Retail	130.2	130.2	133.2	*29.0*	-	162.2
Total FTEs	**1,240.3**	**1243.4**	**1251.8**	***46.1***	***57.0***	**1340.0**

Source: QUU (2012).

Halcrow noted that employee expenses for water increase by 26% in 2012-13 and are the major contributor to increases in employee expenses. This occurs as:

(a) direct water employees are increasing by 32 to 259 FTEs, while direct wastewater employees are reducing by 1.5 FTE to 349.5 FTEs. The increase in water FTEs stems from an additional maintenance effort while wastewater activity has reduced following completion of the flood recovery response; and

(b) water is allocated a greater proportion of call centre costs in anticipation that enquiries will relate mainly to water in the ratio of 54:46.

The Authority notes that QUU's employee cost estimate of $96.78 million, corresponds to an average cost of $72,222 per FTE which includes allowances for overtime, superannuation, leave allowances and payroll tax.

Wage Index

For the SunWater investigation (QCA 2012a), the Authority concluded that ABS labour price index data was an objective and authoritative source of information for the estimation of future labour cost movements. The Authority also considered that labour costs in Queensland were likely to rise by more than the general inflation rate because the continuation of strong growth in the resources sector would maintain upward pressure on labour costs.

The Authority's updated estimates of labour cost escalation, based on the latest 10-year period (March 2002-March 2012) of the ABS labour indexes used for the SunWater investigation, are set out in Table 1.74 below[22].

Table 1.74: Labour Price Index - Compound Average Growth Rates

Labour price index	*Compound Average Annual Growth Rate (March 2002-March 2012)*
All Industries (Queensland)	3.9%
Electricity, gas, water and waste services (Australia)	4.3%
Construction (Australia)	4.3%

Source: ABS (2012b)

Halcrow noted that the Queensland Government adopted a wage price index forecast of 3.25% for 2012-13 in its 2012-13 budget. Halcrow noted that more recent information indicates a softening in the Queensland labour market such that a reduction in the wage index going forward should be expected. Halcrow recommended that the Queensland Government forward estimate of 3.5% should be used to inform wage cost increases in 2013-14 and 2014-15.

The Authority considers that QUU's proposal to escalate its labour costs by 4.25% in 2012-13 is reasonable given the agreed EBA currently in place. For future years, the Authority considers that in view of the softening of the labour market a lower estimate should be negotiated. The Authority has accepted the Queensland Government forward estimate of 3.5% for 2013-14 and 2014-15 and notes this is consistent with its recent review of Seqwater irrigation prices, in which an average growth rate of 3.6% was applied over 1 July 2013 to 30 June 2017 (a longer forecasting period).

Benchmarking

Halcrow noted that QUU's total employee expenses by volumes of water purchased and by wastewater serviced properties are increasing in contrast to Unitywater's which are decreasing:

(a) QUU employee expenses per kl increase by 10.9% in 2012-13; employee expenses per connection increase by 13.0%; and

(b) Unitywater employee expenses per kl decrease by 7.6% in 2012-13; employee expenses per connection decrease by 3.8%.

[22] The Authority considers that a 10-year estimation period should be used in order to obtain a reasonable balance between short-term and long-run influences to arrive at a plausible basis for forecasting.

Halcrow also assessed water-related employee expenses (by volume) and wastewater related employee expenses (by connections). This also showed that QUU's employee expenses by unit of supply are increasing while Unitywater's are decreasing:

(a) QUU's water-related employee expenses per kl increase by 21.6% in 2012-13; wastewater-related employee expenses per connection increase by 5.4% (this includes FTEs allocated to these services); and

(b) Unitywater's water-related employee expenses per kl decrease by 7.2% in 2012-13; wastewater-related employee expenses per connection decrease by 5.9%.

QUU's and Unitywater's employee cost per connect and water purchases are compared in the table below.

Table 1.75: Employee Costs Per Unit

	QUU	***Unitywater***
Employee Expenditure Water	41,958.60	17,764.10
Drinking Water Purchases (ML)	130,834	60,448
$/kL	**0.32**	**0.29**
Employee Expenditure Wastewater	47,065.70	26,708.50
Wastewater Properties Serviced (No)	500,650	295,188
$/property	**94.01**	**90.48**

Source: Halcrow 2012

In response to Halcrow's analysis, QUU noted that Unitywater's employee expenses do not include those incurred in providing corporate services. Further, that Halcrow's analysis does not take into account the policies relating to in-sourcing and out-sourcing. QUU stated that this aspect is important as employee expenses are only one part of overall expenditure.

Halcrow noted that:

(a) it did not have information on the employee expenses in Unitywater's corporate costs. However, a similar proportion to that identified by QUU could be assumed. If so, QUU's unit cost of providing services could be up to 10% less than for Unitywater;

(b) if contractor expenses are also taken into account, the unit costs of providing water services are 5% greater than for Unitywater while the unit costs of providing wastewater services are approximately the same;

(c) it has reduced Unitywater employee expenses to reflect more efficient levels. Further, QUU's networks are less asset intensive (per service unit) and would be expected to attract a lower unit operating cost than Unitywater; and

(d) taking overall expenditure into account, QUU's unit operating costs for water are almost 50% greater than its interstate peers and 20% greater for wastewater. Given that employee expenses comprise some 36.5% of QUU's operating costs, some efficiencies in employee expenses would be expected.

Halcrow remained concerned with the efficiency of QUU's employee expenses, in particular:

(a) QUU has higher labour costs than its peers, particularly for water services;

(b) incurring excessive additional labour costs on the shift of emphasis from reactive to proactive maintenance planning (there should be offsetting savings); and

(c) engaging a greater number of employees than would otherwise be required to meet the expedited separation program stemming from a change in timing and project scope.

On this basis, Halcrow considered that an adjustment of 5-10% to QUU's employee expenses in 2012-13 would be justified. Accordingly, a reduction of $4.84 million (5%) was recommended by Halcrow.

The Authority notes that Halcrow has drawn on a range of factors to form its view that QUU's employee expenses are above efficient levels. The Authority has accepted Halcrow's proposed adjustment in 2012-13.

Future Productivity Gains

Halcrow noted that whilst QUU had advised of past gains flowing from changes to shift arrangements, it has not quantified the improvements in labour productivity it has targeted for future years. Future productivity improvements could be expected to partly offset any real movements in wage/salary rates. Halcrow noted that the forward estimates for employee expenses do not reflect the sharp drop off that would be expected with the completion of transition projects and the introduction of new systems.

The Authority notes that the QUU EBA is due to expire and the constraints imposed by the workforce framework no longer apply. The Authority has estimated that the conclusion of all one-off new initiatives (including the ICT separation program) should result in a fall in expenditure in 2013-14 of 4.25%[23].

The Authority notes that it would expect a productivity gain to be included in future estimates. The Authority has adopted an annually compounding 1.5% labour productivity measure in other water industry reviews (SunWater and Seqwater, 2012). The Authority has adjusted QUU's estimates for this productivity gain for 2013-14 onwards.

Conclusion

QUU has taken efficiency measures to improve its labour productivity in the short term and containing business as usual employee expenses. The rise in total employee expenses can be attributed to new initiatives.

After comparing QUU with its peers, and noting the increases in FTEs included for proactive maintenance and for the expedited separation program, Halcrow recommended an adjustment of 5-10% to QUU's employee expense in 2012-13 to bring it to an efficient level.

The Authority notes that QUU's forward estimates for employee expenses from 2013-14 onwards do not reflect the sharp drop off that would be expected with the completion of transition projects in 2012-13 and the introduction of new systems. A productivity gain would also be expected.

The Authority has adjusted accordingly.

[23] Based on the removal of 57 FTEs from a total of 1340 current FTEs.

Table 1.76: Revised Labour Costs ($m)

	2012-13	*2013-14*	*2014-15*
Water	39.9	38.9	39.1
Wastewater	52.1	50.8	51.0
QCA Total	91.9	89.7	90.1
QUU Submitted	96.8	98.4	102.0
Variance	-4.8	-8.6	-11.9

Source: QCA calculations.

Corporate Costs

In its Information Requirements, the Authority defined corporate costs as general corporate expenditure that cannot be readily allocated to other cost types.

As in previous years, QUU did not allocate expenditure to the corporate cost category in the Authority's data templates. QUU stated that corporate costs are not a mutually exclusive cost category, and its corporate costs have been captured within the other cost categories in the data templates.

However, QUU noted that corporate costs can be allocated under a separate method which it uses to report costs internally. These costs align with the Authority's definition, except they exclude environmental management costs and include accounts receivable for sundry charges. These costs were provided to Halcrow for their review.

On this basis, QUU's corporate costs are $68.4 million in 2012-13 (see table below). This is a $10.2 million increase on revised 2011-12 costs of $58.2 million. The revision to $58.2 million in 2011-12 (up from $52.0 million forecast in 2011-12) is due to $6 million of additional expense from the ICT program.

QUU noted that $9.4 million (92%) of the $10.2 million increase in 2012-13 was due to year-to-year variations in new initiatives, with the significant increase in corporate cost initiatives arising from the ICT separation program.

Table 1.77: QUU 2012-13 Corporate Costs ($'000)

	Employee	*Contractors*	*Licence & Regulatory*	*Other Material & Services*	*Total*
Office of CEO	4,434.6	61.7	-	7,792.7	**12,289.0**
People & Safety	5,379.3	- 120.0	-	3,494.7	**8,754.0**
Finance, Risk & Procurement	9,567.8	240.0	677.2	5,663.2	**16,148.2**
Information Services	- 3,878.1	8,642.7	-	21,313.5	**26,078.1**
Strategy & Growth	562.9	-	-	27.8	**590.7**
Operations	528.7	50.0	-	736.8	**1,315.5**
Retail	1,341.2	-	-	1,910.9	**3,252.1**
Total	**17,936.4**	**8,874.4**	**677.2**	**40,939.6**	**68,427.6**

Note: QUU did not provide explanation of the negative numbers in time for the draft report, this will be investigated for the final report. Source: QUU (2012)

Corporate Cost Increases

Halcrow queried the $6 million increase in ICT 2011-12 corporate costs to $58 million. Halcrow noted that the budgeted increase in corporate costs in 2011-12 to $52.0 million was then justified in part by QUU due to expenditure of $6 million on the ICT investment program. Halcrow noted that QUU's 2012-13 submission indicates that the 2011-12 budget originally included $6.0 million for the ICT investment program[24].

Halcrow stated that the consistency of these figures with the amount by which 2011-12 corporate costs are now claimed to have been underreported raises a question over whether the amount may be double counted. The Authority also notes that it also raises an issue of the accuracy of forecasting of corporate costs.

Halcrow also noted that the transfer of 30.9 FTEs from Corporate Services into Operations in 2012-13 would indicate that the effective increase in corporate costs is further inflated by $4.0 million[25]. Halcrow noted that the increase in corporate labour costs predominantly relates to the ICT separation program.

Halcrow found that the principal factor contributing to the increase in corporate costs is the separation from BCC.

Benchmarking

Halcrow benchmarked QUU's corporate costs under a range of approaches, noting that this task is complicated by the differing organisational structures of comparator firms and definitions of corporate costs.

[24] Subsequent to the Halcrow report, QUU submitted that the $6 million increase in ICT costs in 2011-12 were not included in budgeted corporate costs for 2011-12.
[25] Assuming that the cost of the transferred FTEs of approximately $4 million (i.e. 30.9 @ $129,400 average corporate FTE) are excluded from the 2012-13 figures.

Halcrow noted that in past submissions to the Authority, Unitywater relied on a New South Wales (NSW) Government paper in support of its corporate costs:

> *Advice on corporate overheads was sourced from the Council on the Cost and Quality of Government (CCQG), now known as the Performance Improvement Branch, Department of the Premier and Cabinet, New South Wales government. For agencies of greater than 350 full time equivalent employees CCQG have benchmarked corporate overheads at between 10 and 12% of overall operating costs.*

Halcrow found that QUU's corporate costs are 12.8% of total operating expenditure (including bulk water), marginally higher than the CCQG benchmark of 10-12%. However, if bulk water costs are excluded, QUU's corporate costs are 25.7% of operating expenditure.

Halcrow compared QUU's and Sydney Water's corporate costs for 2012-13 (excluding bulk water, see table below) to the CCQG benchmark. Halcrow noted that Sydney Water's corporate costs were 13.5% of total operating expenditure (excluding bulk water and desalination) compared with the CCQG benchmark of 10-12 percent. Halcrow noted the consultant engaged by IPART to review Sydney Water's operating expenditure concluded that the level of corporate costs was marginally high when compared to a frontier company and there are opportunities for further efficiencies[26].

QUU's corporate costs (25.7%) exceed Sydney Water's corporate costs (13.5%), as a percentage of operating costs excluding bulk water.

Table 1.78: Corporate Costs compared to Total Operating Expenditure

QUU			*Sydney Water*		
Description	***$million***	***% of total opex***	***Description***	***$million***	***% of total opex***
Office of CEO	12.3	4.6	Managing Director	4.0	0.5
People & Safety	8.8	3.3	Human Resources	15.2	1.7
Finance, Risk & Procurement	16.1	6.0	Finance & Regulation	10.9	1.2
Information Services	26.1	9.8	Corporate Services	89.7	10.1
Strategy & Growth	0.6	0.2			
Operations	1.3	0.5			
Retail	3.2	1.2			
Total Corporate	**68.4**	**25.7**	**Total Corporate**	**119.8**	**13.5**
Total Operating Expenditure	**266.5**		**Total Operating Expenditure**	**887.5**	

Note: Total operating expenditure excludes the cost of bulk water, and for Sydney Water, the cost of desalinated water. The costs of redundancies and finance lease payments are excluded from Sydney Water's corporate costs to make them more comparable to QUU's corporate cost figures. Source: Halcrow (2012).

[26] The Authority notes that in doing so Halcrow has sought to validate the results from its application of the CCQG benchmark (10-12% of operating costs, excluding bulk costs) by using a different benchmark (the frontier company). The consistency in results strengthens the relevance of the CCQG benchmark as applied to operating costs excluding bulk water. IPART's consultants imposed efficiency gains on Sydney Water.

In response to Halcrow's analysis, QUU noted that the estimate of Sydney Water's corporate costs is not exactly comparable to QUU's. QUU provided further information on corporate costs that made adjustments for:

(a) differences in cost categorisation between QUU and Sydney Water; and

(b) the capitalisation of corporate costs, which are therefore not part of operating costs.

Halcrow noted even when both issues were accounted for, QUU's revised estimate of corporate costs of $58.7 million accounts for 22% of non-bulk operating costs. Halcrow concluded that QUU's proportion of corporate costs (22%) remains high relative to Sydney Water (13.5%) and the CCQG benchmark (10-12%).

Halcrow also benchmarked the ratio of corporate cost to employees, connections and revenues. Halcrow noted that such ratios are affected by a range of factors including the relative reliance on contractors compared to internal staff, customer mix and the governance arrangements and price constraints existing in the different jurisdictions.

Table 1.79: Corporate Cost Ratios Benchmarking

Water Company	*$'000/FTE*	*$/customer connection*	*$/revenue*
QUU	52.9	123.8	69.9
Unitywater	38.6	122.1	66.6
Sydney Water	39.5	66.8	53.0
Victorian water retailer/distributor (1)	109.6	80.5	77.0
Victorian water retailer/distributor (2)	89.5	62.5	78.5
Victorian water retailer/distributor (3)	64.7	35.0	43.2

Note: Figures for QUU and Unitywater are sourced from their respective Interim Price Monitoring Information Return/Submission. Figures for Sydney Water are sourced from the expenditure review consultant's report. Figures for Victorian water companies are escalated from figures presented in the QCA's 2011-12 Interim Price Monitoring Report). Source: Halcrow (2012).

Halcrow considered that the key ratio is that of corporate costs to customer numbers. This shows most clearly the impact of the level of corporate costs on customers' bills. While the ratio for QUU is comparable with Unitywater, it is double the figure for most interstate comparators.

Conclusion

On the basis of its analysis, Halcrow questioned the efficiency of QUU corporate costs. Using the 10-12% benchmark of the CCQG as a guide, Halcrow estimated the efficient level of corporate costs for business as usual activity in the range of $27 million to $32 million. This leaves around $36 million to $41 million accounted for by one-off separation expenditures and/or inefficiencies.

QUU nominated $37.4 million as 'new initiative' expenditure in 2012-13. However, Halcrow noted that much of this is not corporate expenditure (e.g. planned maintenance and sewer condition testing) or business as usual expenditure (e.g. IT investment program). By

comparison, for example, a significant component of Sydney Water's corporate expenditure relates to new IT systems.

Halcrow found that QUU has encountered a series of problems in the development of new systems for the separation from BCC. These issues have resulted in additional expenditure in excess of an efficient level. These problems included initial difficulties in defining the task and project scope, subsequent change of scope and, adoption of an expedited program because of previous delays and announcement by BCC of an earlier than expected deadline for final separation.

Halcrow considered that it is likely that greater costs were incurred on BCC's legacy systems than could have been achieved in a competitive market and some of these additional costs have carried forward to 2012-13.

Halcrow also compared QUU's expenditure on new initiatives and that spent by Unitywater on non-recurrent operating expenditure and found that this also points to excessive expenditure by QUU.

Halcrow found that the increase in 2012-13 expenditure over that incurred in 2011-12 is around $14.2 million ($10.2 million plus $4.0 million) after adjustment for the transfer of 31 staff out of corporate roles. The Authority notes QUU's contention that the additional cost of the ICT program in the revised 2011-12 corporate costs are not in fact double counted.

Taking into account the results of its benchmarking and given the inherent difficulties in comparing corporate cost across entities, Halcrow concluded that 25% or around $4 million of the increase in QUU's proposed corporate costs increase is inefficient.

Halcrow noted that this should be adjusted for the recommended reduction in employee expenses as noted above. Given that these represent around 26% of corporate costs, a net reduction of $2.95 million is proposed.

The Authority notes that Halcrow has drawn on a range of indicators to form its view that QUU's corporate costs are above efficient levels. The Authority has accepted Halcrow's proposed adjustment to corporate costs.

Electricity Costs

QUU purchases electricity via two contracts, one for large contestable sites using more than 100 MWh per annum and a second for small contestable sites. QUU's estimates of the cost of electricity are built up using price and growth indices and efficiency savings.

For small contestable sites, QUU estimated a price increase of 26.8% in 2012-13 based on the SKM MMA forecast for the WSAA. This index includes the impact of carbon pricing. QUU noted that under its small contestable sites contract a 19% discount is applied, therefore QUU has forecast a net price increase of 7.8% for these sites.

For large contestable sites, QUU estimated a price fall of 11.9% in 2012-13 based on its contracted rates, which exclude the impact of carbon pricing. QUU submitted that it is currently negotiating with its electricity provider on the impact of the carbon price.

QUU also included $1.44 million in its 2012-13 electricity budget for the purchase and surrender of renewable energy certificates (RECs). In further discussions, QUU clarified that it ceased this activity in January 2012 and indicated that this amount could be offset against the impact of the carbon price for large sites.

For 2013-14 and 2014-15, QUU applied the SKM/MMA indices of 4.85% and 10.32% respectively (inclusive of the impact of carbon).

QUU forecast that its electricity usage will grow in-line with the growth of residential dwellings. QUU applied a 3.5% reduction to its estimates of energy costs in 2012-13, this reduction follows the development of an energy action plan and results in a $400,000 saving.

Table 1.80: QUU Electricity Costs ($m)

	2012-13	*2013-14*	*2014-15*
Water	1.66	1.78	2.00
Wastewater	9.49	10.11	11.32
Total 2012-13 submission	**11.15**	**11.88**	**13.32**
QUU 2011-12 Submission	12.71	13.76	**na**

Source: QUU (2012 and 2011).

The Authority has reviewed QUU's estimated electricity prices, energy use and whether efficiency gains have been included in QUU's estimates.

Prices

The Authority has accepted QUU's price fall of 11.9% for large sites as efficient, as it reflects the contractual provisions and savings arising from competitive tender. This excludes the cost of carbon.

In assessing the price for small contestable sites, the Authority notes that in early to mid 2012, there was a range of benchmarks available to QUU:

(a) the SKM/MMA report for WSAA – the draft report was released in June 2011 and the final report in October 2011;

(b) the Authority's SunWater review – draft in November 2011 and final in May 2012; and

(c) the Authority's Determination on Regulated Retail Electricity Prices for 2012-13 – draft on 30 March 2012 and final on 31 May 2012.

QUU claimed the Authority's May 2012 final determination is too late for its budget processes, which occurred in January 2012.

In the 2011-12 Final Report, the Authority noted that where it is known that new forecasts are imminent and can be accommodated before new prices become effective (1 July), the Authority considered that information available up to early June could reasonably be used to inform final prices.

The Authority notes that QUU's contract for small sites ties its pricing to regulated tariffs (and applies a 19% discount). It was known that the Authority's determination was due by 31 May 2012. Therefore, the Authority has used its Final Determination on 31 May 2012 (and QUU's 19% discount) to calculate the efficient benchmark for QUU's electricity price forecast for 2012-13. The price impact for small contestable sites is a decrease of 8.61%, excluding carbon.

To estimate the cost of carbon, the Authority has applied the cost of 1.99c/kWh in its Final Determination to QUU's energy usage, resulting in an estimate of $1.82 million for all sites.

Energy Use

QUU's model increases energy use at a rate reflecting the growth in dwellings. In support of this approach, QUU stated that electricity is related more to the treatment of sewerage relative to the distribution and retail of water. As such, QUU linked the growth in electricity to growth in dwellings, as this was a key driver of sewerage growth.

However, the Authority notes that QUU has previously aligned growth to bulk water volumes. In past reviews, the Authority and its consultants found this approach to be appropriate. The Authority asked Halcrow to re-examine this issue.

On the drivers of energy use, Halcrow advised that the volume of water provides a more direct link to water pumped and energy use. Actual increases in pumping will depend on where additional demand is realised. However, the number of dwellings provides no clearer indicator than volume of water. Therefore, Halcrow concluded that the growth in electricity usage for water activities should be based on the growth in bulk water volumes.

For sewerage activities, Halcrow noted that sewage flows are influenced by range of factors including water flows and storm water infiltration. Growth in water usage will not have a corresponding growth in sewage flows, as a proportion will relate to non-sewage uses such as garden watering or car washing. Growth in electricity usage for wastewater activities should therefore be based on the growth in connections.

The Authority has accepted Halcrow's advice on the drivers of growth in energy use for water (bulk water) and wastewater (connections).

Efficiencies

Finally, the Authority notes that the Third Horizon report commissioned by QUU identified potential net savings of $250,000 annually from efficiencies in electricity usage. QUU has applied savings of $400,000 to its 2012-13 budgeted expenditure.

The Authority recognises that QUU has taken a range of actions to reduce electricity expenses to date, including:

(a) engaged a consulting firm to verify its monthly accounts for accuracy in billing to ensure there are no overlaps between bills, the correct electricity charges are applied, there are no unexplained variations in electricity demand and to identify demand spikes and opportunities for improved load management;

(b) engaged a consultant in 2011-12 to develop an energy action plan to achieve a 3.5% energy saving; and

(c) constructed co-generation plants at its two main sewage treatment plants (Luggage Point and Oxley). Unfortunately, the Oxley co-generation plant was damaged in the 2011 floods and is not expected to resume electricity generation in 2012-13.

In summary, the Authority has adjusted for its final determination on regulated tariffs (including carbon) and the drivers of energy usage. This slightly reduces QUU's electricity costs in 2012-13.

Table 1.81: Revised QUU Electricity Costs ($m)

	2012-13	*2013-14*	*2014-15*
Water	1.23	1.34	1.54
Wastewater	9.87	10.52	11.79
QCA Total	11.10	11.86	13.33
QUU Proposed Total	11.15	11.88	13.32
Variance	(0.05)	(0.02)	(0.01)

Source: Halcrow (2012), QCA (2012).

Other Materials and Services

Other materials and services are defined as all other operating expenditure accounts not already included in the previous operating expenditure categories. As such, this cost category encompasses a broad range of costs.

QUU proposed total expenditure on other materials and services of $144.4 million in 2012-13, which represents 54.2% of total non-bulk operational expenditure. This is an increase of 10.7% on estimates of 2011-12 expenditure, which is 42.6% above 2010-11 expenditure.

QUU indicated its materials and services budget for 2012-13 include savings of $2.2 million, based on the savings previously identified by its consultants Third Horizon.

Table 1.82: QUU Other Materials and Services Expenses ($'000 nominal)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*
Water	32,867.2	59,758.6	68,034.8	63,951.8	68,423.7
Wastewater	43,498.7	59,760.4	65,412.7	66,745.0	73,953.8
Trade Waste	7,570.2	10,310.9	10,735.1	11,002.9	12,293.7
Non-regulated	7,519.3	617.7	206.8	216.2	222.9
Total	**91,455.5**	**130,447.5**	**144,389.4**	**141,916.0**	**154,894.1**

Source: QUU (2012)

Increases in other materials and services varied greatly between geographic areas. For example, expenditure in Brisbane is expected to fall by 0.2% while expenditure in Ipswich is forecast to increase by 87.8% to $25.8 million.

Halcrow found that there are many items that make up other materials and services and annual variations are influenced by:

(a) changes in cost allocations between expense line items and between capital and operating expenditure;

(b) the maintenance schedule and the relative emphasis between proactive and reactive maintenance; and

(c) growth and targeted service levels, procurement policy and abnormal events including the 2011 flood and ICT separation program.

The expenditure items with the largest variations between 2011-12 and 2012-13 are shown in the table below. The item with the largest variation is contractor/sub-contractor costs which are forecast to increase by $10.8 million to $15.2 million.

Table 1.83: Other Materials and Services Expenses – Major Variances

Expenditure Item	*2011-12 ($'000)*	*2012-13 ($'000)*	*Variation ($'000)*	*Variation %*
Bad & Doubtful Debts	3,815.9	2,086.3	-1,729.6	-45.3
Consultancy Fees	2,697.4	3,205.8	508.4	18.8
Consultancy Fees - New Initiatives	634.4	2,030.0	1,395.6	220.0
Contractor/Sub-Contractor Costs	4,415.3	15,235.6	10,820.4	245.1
Insurance Premiums & Related Charges	2,433.3	3,800.0	1,366.7	56.2
Plant & Equipment Hire - Non-Monthly Hire	3,342.4	4,206.8	864.4	25.9
Postage	1,253.2	2,064.9	811.7	64.8
Printing	1,603.1	863.6	-739.5	-46.1
Rent - Property	3,905.7	4,857.4	951.7	24.4
Services - Customer Call Centre TSA	3,957.4	-0.0	-3,957.4	-100.0
Services - ICT Desktop Support TSA	8,863.8	9,598.0	734.2	8.3
Services - New Initiatives	840.1	3,960.9	3,120.8	371.5
Services - Payroll Services TSA	1,111.1	1,790.0	678.9	61.1
Total	**38,873.2**	**53,699.4**	**14,826.2**	**38.1**

Source: QUU (2012)

QUU applied a 2.5% price increase to its other materials and services expenditure, reflecting the midpoint of the RBA inflation target band. Halcrow found that this rate of increase is less than Queensland Treasury's forecast of 2.75%. Halcrow concluded that QUU's 2.5% escalation rate is reasonable in light of this benchmark.

However, Halcrow found that the expenditure for other materials and services in 2012-13 is inflated in some instances by duplication of service provision. For example, payroll services are in transition from BCC to a new service provider, with costs being incurred in both cases.

Furthermore, Halcrow had reservations as to the quantum of the increased allowance for contractor involvement in QUU's planned maintenance program.

Halcrow noted that the additional $10.8 million to be incurred for contractors engaged for this purpose would equate to an additional 54 FTEs[27]. Halcrow proposed that a more likely scenario may be that five four-person maintenance crews may be engaged under contract. At a total amount in the order of $4 million[28], this would result in a net reduction of $6.82 million from the forecast allowance in 2012-13.

The Authority has applied Halcrow's reduction to QUU's other materials expenditure in 2012-13, 2013-14 and 2014-15.

Table 1.84: Revised QUU Other Materials and Services Costs ($m)

	2012-13	*2013-14*	*2014-15*
Water	64.817	60.9	65.4
Wastewater	72.546	74.0	82.4
QCA Total	**137.4**	**134.9**	**147.9**
QUU Proposed Total	**144.2**	**141.7**	**154.7**
Variance	**-6.8**	**-6.8**	**-6.8**

New Initiatives

In its submission, QUU identified a series of new initiatives. These are projects that represent step changes in expenditure from the previous year and are expected to be operational for a limited number of years. Forecast expenditure on initiatives in 2012-13 is $37.0 million, an increase of $17.6 million over expenditure of $19.4 million in 2011-12.

QUU submitted that these projects have two forms, where investment is required prior to achieving efficiency gains and where the initial 2010-11 budget excluded projects later found to be necessary to meet customer service levels or regulatory requirements, for example: legal requirements (e.g. pensioner verification for granting of refunds) and improved operations (e.g. proactive maintenance).

Halcrow found that it is difficult to assign many of the identified initiatives to individual services (e.g. water, wastewater) based on the descriptions provided. Many appear to be corporate functions, the cost of which would subsequently be allocated to specific services.

Halcrow considered that a number of these new initiatives are more appropriately considered to be business as usual expenses:

(a) Strategy Manager and Strategy Analyst and Planning Lawyer – these are new positions that will continue to be funded, in which case they should be considered to be business as usual. It is further noted that QUU has identified efficiency savings by removing the position of Manager Strategy and Business Efficiency; on the basis of position titles, it appears that these two changes would offset each other;

(b) ICT investment program (expensed labour) – this does not appear to be a one-off expensing of expenditure previously otherwise accounted. The ICT separation

[27] Assuming $100,000 per FTE plus equal allowance for plant and materials costs.
[28] 20 persons at $100,000 per FTE plus equal allowance for plant and material costs.

program is separately accounted for, and any remaining expenditure on ICT is business as usual expenditure;

(c) sewer smoke, CCTV testing – Halcrow noted such testing would normally be undertaken as part of business as usual asset management activities, particularly given that QUU has noted that these investigations inform its capital planning; and

(d) planned maintenance – whilst Halcrow supports the implementation of a balanced approach to asset maintenance which incorporates a planned maintenance program, this should lead to an optimised level of expenditure (through savings in reactive maintenance) without additional costs.

On the basis of the above, Halcrow concluded that that some 40% of the 'new initiatives' identified by QUU ($8.137 million in 2011-12 and $15.177 million in 2012-13) would be appropriately identified as 'business as usual' expenses (see table below).

Table 1.85: New Initiatives assessed as Business as Usual ($'000)

	2011-12	*2012-13*
Professional Development for the Board	70	22
Strategy Manager and Strategy Analyst	452	452
Planning Lawyer	133	133
ICT investment program (expensed labour)	6,000	5,331
Pensioner verification	190	514
Enhanced debt management	625	245
Sewer smoke, CCTV testing	667	667
Planned maintenance	-	7,813
Total	**8,137**	**15,177**

Source: QUU (2012)

The re-classification of these new initiatives does not mean that they are not prudent and efficient but rather that they should be included in QUU's base budget. This has implications for the analysis of QUU's achievement of the Authority's efficiency gains (see below).

Efficiency Gains

In its 2010-11 Final Report, the Authority noted that its analysis indicated there was scope for further efficiency gains. It also noted that economic regulators in other jurisdictions have applied annual efficiency gains to water retail businesses of up to 3.5%. Accordingly, the Authority set QUU efficiency targets for 2011-12 and 2012-13 of 4% in 2011-12 and 6% in 2012-13 consistent with those imposed on other entities.

The Authority has reviewed the cost proposed by QUU in its 2012-13 price monitoring submission against these high level general targets.

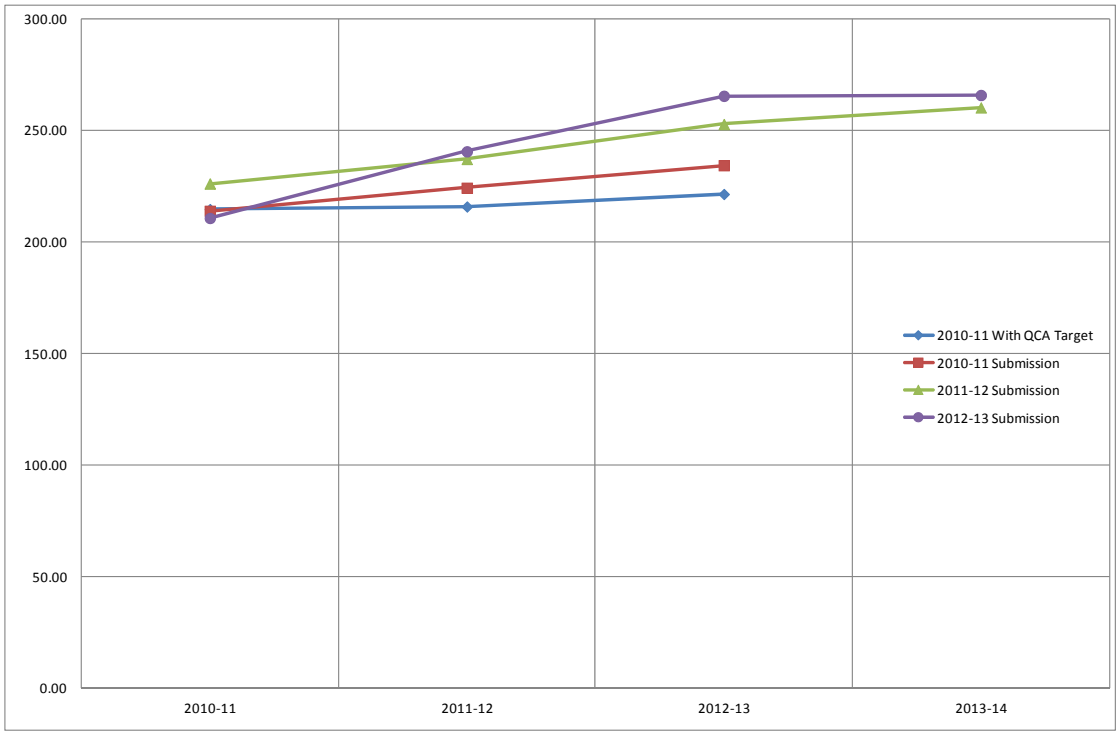
The Authority notes that QUU's 2012-13 total non-bulk operational expenditure of $265.36 million is $12.1 million (4.78%) higher that than found to be reasonable in the Authority's 2011-12 Final Report. QUU's proposed non-bulk expenditure for 2012-13 in its current submission is $43.99 million (19.87%) above the target set by the Authority in its 2010-11 report.

Table 1.86: QUU Non Bulk Expenditure 2010-11, 2011-12 and 2012-13 Submission ($m)

Forecasts	*2010-11*	*2011-12*	*2012-13*	*2013-14*
2010-11 Submission (a)	213.84	224.18	234.26	n/a
2010-11 with QCA target (b)	214.63	215.76	221.37	n/a
2011-12 Submission (c)	226.07	237.08	252.69	260.19
2012-13 Submission (d)	210.62	240.49	265.36	265.73
(d) – (b) $	-4.01	24.73	43.99	na
(d) – (b) (%)	-1.8%	11.46%	19.87%	na

Source: QUU (2012, 2011 and 2010) QCA (2011).

Figure 1.4: QUU Non Bulk Expenditure 2010-11, 2011-12 and 2012-13 Submission ($m)



Source: QUU (2012, 2011 and 2010) QCA (2011).

A number of factors have driven this outcome. The primary driver has been the introduction of a range of new initiatives by QUU subsequent to the 2010-11 submission. These new initiatives are budgeted by QUU as costing $37.0 million in 2012-13. As noted above Halcrow questioned the nature of the expenditure on new initiatives, including the absence of a decline in expenditure in future years.

While QUU has also implemented a range of cost savings initiatives (totalling $21.9 million) as discussed above, the net impact is that QUU's non-bulk operating expenditure has increased above the target levels set by the Authority in 2010-11.

An analysis of operating costs per customer allows for the increase in operating costs due to the growth in connections to be taken into account. An analysis of QUU's non-bulk opex per customer (see table below), shows that operating costs per customer have increased by 22.85% above that originally considered to be prudent and efficient in 2010-11.

Further, QUU's cost per connection based on the 2012-13 submission is $26.6 or 5.58% higher than that considered prudent and efficient by the Authority in the 2011-12 review (not in the table below which relates to the 2010-11 target).

Table 1.87: QUU Non Bulk Opex per Connection & ML

	2012-13 Non Bulk Cost ($m)	*2012-13 Water Connections*	*Cost per Connection ($)*	*Cost per ML ($)*
2010-11 Submission (a)	234.26	529,493	442.43	1789.5
2010-11 With QCA Target (b)	221.37	539,828	410.08	1669.4
2011-12 Submission (c)	252.69	528,170	478.43	2025.8
2012-13 Submission (d)	265.36	526,734	503.78	2028.2
Variance (d)-(b)	$43.99	-13,094	$94.71	$358.8
Variance (d)-(b) %	**19.87%**	**-2.43%**	**22.85%**	**21.49%**

Source: QUU (2012, 2011 and 2010), QCA (2011)

Halcrow examined QUU's performance against the Authority savings targets for 2011-12 and 2012-13 (see table below). Halcrow found that even when the new initiatives are deducted from operating costs and therefore excluded from comparison, QUU has fallen short of the Authority's 2% savings target in 2011-12 and 2012-13. Using this method, QUU's non-bulk operating expenses are 3% above the efficient level.

The Authority notes that the table below deducts the total amount of new initiatives from reported expenditure and assesses that against the Authority's defined target. As noted above, Halcrow considered that 40% of the new initiatives spent can be considered business as usual. Doing so would increase the QUU baseline (business as usual) expenditure and result in a further deterioration of QUU's performance against the savings target – to being 10% above the efficient level.

The Authority notes that QUU appears to consider that the 2% efficiency target applies to business-as-usual operating expenses. The Authority considers that:

(a) this creates an incentive to move business-as-usual expenses into 'new initiatives'. New initiatives comprise a broad range of projects and cut across the sampled cost categories of employee expenses, corporate costs, and materials and services;

(b) it is extremely difficult to separate out and individually and robustly assess new initiatives in the time available for price monitoring, particularly as their allocation to

sampled cost categories is not always clear and other (benchmark) entities include these initiatives in their business as usual expenses;

(c) in its 2010-11 Final Report, the Authority's 2% efficiency target was not limited to business-as-usual expenses. The 2% target was originally applied to provide an incentive to operating costs that was aligned with the objectives behind the creation of QUU – to achieve efficiencies and economies of scale; and

(d) in its 2011-12 Final Report, the Authority accepted the corporate costs and new initiatives proposed by QUU on the basis of high level analysis of corporate costs by its consultants.

For this review, Halcrow has queried the inclusion of certain costs as new initiatives and has recommended they be considered as business-as-usual expenses.

The Authority is inclined to agree, and notes that the incentive to separate out costs from business-as-usual expenses would be lessened in the normal swings and roundabouts that occur over a longer regulatory period, with projects commencing and completing over that period. Going forward, the Authority notes that it has a category of operating expenses denoted as non-recurrent and this should be used to identify one-off expenses for separate review.

Table 1.88: Efficiency Gains – QUU (Proposed) and QCA (Previous Forecast)

Item	*2011-12*	*2012-13*
QUU reported Regulated Operating Expenditure	465.94	535.18
less Bulk Water Costs	-225.45	-269.82
QUU reported Regulated Operating Expenditure (excl Bulk Water)	240.49	265.36
New initiatives[1]	-19.41	-36.99[a]
2011 Flood Costs	-3.98	-
Baseline Regulated Operating Expenditure (a)	**217.10**	**228.37**
QCA defined target for efficient operating expenditure	445.89	495.86
Less Bulk Water allowance	230.13	274.49
QCA defined target (excl Bulk Water) (b)	**215.76**	**221.37**
Variance ($) – actual less target, or (a) – (b)	**1.34**	**7.00**
Variance (%) – actual less target, or (a) – (b)	**0.62%**	**3.16%**

Note: [1] This includes the new initiatives as forecast by QUU. Halcrow considered that 40% are business as usual and should be included in the baseline, this would increase the variance in QUU operating costs from the QCA target by a further 16m (0.4 x 36.99m) in 2012-13 – a variance of 10%. Source: QCA based on Halcrow (2012)

The Authority notes that this analysis and the results of high level benchmarking indicate that QUU's non-bulk operating costs for 2012-13 are above efficient levels by at least 3-5%.

This supports the specific efficiencies applied by the Authority to sampled costs, which add to a percentage reduction of 5.2%. As a result, the Authority has not made any further reductions to QUU's non-bulk operational expenditure in 2012-13.

QUU Efficiency Target – Subsequent to the 2012-13 Budget

Subsequent to the preparation of its 2012-13 budget, and based on discussions with its Board, QUU is targeting material efficiencies for the controllable costs of the business over the next two years (2013-14 and 2014-15). The project is to focus on the whole of the organisation, with efficiencies designed to ensure that customers receive the best possible service at the lowest achievable costs.

The Authority understands that these efficiency savings are to be found using the 2012-13 non-bulk operating costs (including new initiatives) as the base level. QUU is pursuing six streams of work to achieve this target: optimising the maintenance delivery model, reducing non-revenue water, optimising treatment plan operations, optimising capital procurement, optimising opex procurement and through QUU control centre delivery.

The Authority supports this initiative which is consistent with its analysis of QUU non-bulk operating costs. The Authority has included this saving in its forward estimates of operating costs from 2013-14.

The Authority notes that embedding benchmarking in the budgeting process (as recommended above) would ensure that such analysis is available at the time of setting prices to customers in 2013-14. This can inform a decision on the sharing of cost savings with customers in prices.

Summary

The Authority has adjusted QUU's estimates of operating costs for:

(a) an increase in bulk water, to reflect changes to demand;

(b) a reduction in electricity, to reflect the Authority's Final Determination on Regulated Retail Tariffs and advice from Halcrow on the appropriate drivers of energy use;

(c) a reduction in estimates of employee expenses, to bring QUU in line with its peers and for the expedited separation program. Forward estimates are correspondingly reduced and to reflect the completion of one-off new initiatives which are due to conclude in 2012-13 and a forward labour productivity gain of 1.5% per annum;

(d) a reduction in corporate costs, based on a range of benchmarks that indicate corporate costs are above efficient levels; and

(e) a reduction in other materials and services, to reflect Halcrow's view of the more likely costs to be incurred under the shift in emphasis to planning maintenance and noting that longer term savings are expected.

This results in a net adjustment of $14.15 million to operating costs in 2012-13, or 5.2% of non-bulk operating costs.

The Authority notes that its net adjustment is supported by an analysis of QUU's non-bulk operating costs for 2012-13 against the efficiency targets originally imposed by the Authority in 2010-11. These targets were imposed to achieve the objective of economies of scale and efficiencies in service provision which was the rationale for the creation of the distribution-retail water entities. QUU has not achieved the Authority's target in 2012-13.

The Authority's adjustment is also supported by QUU's internal savings target (set subsequent to price setting) for non-bulk operating costs. The Authority has included a 10% savings target in its estimates of costs for 2013-14 onwards for these material efficiencies.

The Authority supports QUU's ongoing pursuit of operating efficiencies and considers that QUU should continue to seek further operational efficiencies in 2012-13 and beyond as it achieves economies of scale and greater integration.

The Authority's estimate of operating expenditure for QUU over the price monitoring period for water and wastewater over are outlined in the tables below.

Table 1.89: Revised Water Operating Costs – 2011-12 to 2014-15 ($m)

	2011-12	*2011-12*	*2012-13*	*2013-14*	*2014-15*
Bulk water costs	219.76	225.45	270.33	316.88	366.57
Employee expenses	34.32	33.35	39.86	38.91	39.06
Contractor expenses	0.94	0.33	0.23	0.24	0.25
GSL Payments	0.00	0.00	0.00	0.00	0.00
Electricity charges	1.05	1.14	1.23	1.34	1.54
Sludge handling costs	0.00	0.00	0.01	0.01	0.01
Chemicals costs	0.16	0.10	0.08	0.08	0.09
Other materials and services (not relating to capital expenditure)	42.84	59.76	64.82	60.87	65.41
Licence or regulatory fees	0.41	0.36	0.42	0.43	0.45
Corporate Costs	0.00	0.00	0.00	0.00	0.00
Non recurrent costs	0.00	0.00	0.00	0.00	0.00
Indirect taxes	0.00	0.00	0.00	0.00	0.00
Total Operating Costs ex. corporate cost and efficiency	299.49	**320.48**	**376.98**	**418.77**	**473.37**
Efficiency gains inc. corporate costs	-	0.00	(1.25)	(6.09)	(1.61)
Total Operating Costs	299.49	**320.48**	**375.73**	**412.68**	**471.75**
QUU Proposed Total	299.45	**320.48**	**382.22**	**423.78**	**477.37**
Variance	0.03	0.00	(6.49)	(11.11)	(5.61)

Source: Halcrow (2012), QCA (2012).

Table 1.90: Revised Wastewater Operating Costs - 2011-12 to 2014-15 ($m)

	2011-12	*2011-12*	*2012-13*	*2013-14*	*2014-15*
Bulk water costs	0.00	0.00	0.00	0.00	0.00
Employee expenses	56.89	50.96	52.08	50.83	51.03
Contractor expenses	0.88	0.03	0.05	0.05	0.05
GSL Payments	0.00	0.00	0.00	0.00	0.00
Electricity charges	9.21	9.43	9.87	10.52	11.79
Sludge handling costs	8.97	7.39	8.41	8.77	9.14
Chemicals costs	4.37	3.00	3.46	3.60	3.76
Other materials and services (not relating to capital expenditure)	73.06	70.07	72.55	74.01	82.44
Licence or regulatory fees	0.64	0.59	0.59	0.61	0.62
Corporate Costs	0.00	0.00	0.00	0.00	0.00
Non recurrent costs	0.00	0.00	0.00	0.00	0.00
Indirect taxes	0.00	0.00	0.00	0.00	0.00
Total Operating Costs ex. corporate cost and efficiency	**154.00**	**141.47**	**147.00**	**148.39**	**158.85**
Efficiency gains incl. corporate costs	-	0.00	(1.70)	(8.73)	(2.36)
Total Operating Costs	**154.00**	**141.47**	**145.30**	**139.65**	**156.49**
QUU Proposed Total	**156.67**	**141.47**	**152.97**	**156.55**	**168.90**
Variance	(2.67)	0.00	(7.67)	(16.90)	(12.41)

Source: Halcrow (2012), QCA (2012).

Table 1.91: Revised Operating Costs – Total 2011-12 to 2014-15 ($m)*

	2011-12	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
QUU forecast	456.13	461.96	535.18	580.33	646.26	2163.56
QCA forecast	453.49	461.96	521.03	552.33	628.24	461.96
Difference	(2.64)	0.00	(14.15)	(28.00)	(18.02)	(60.18)

Source: QUU (2012) and QCA calculations.

The Authority has adjusted QUU's estimates of operating costs for:

(a) an increase in bulk water, to reflect changes to demand;

(b) a reduction in electricity, to reflect the Authority's Final Determination on Regulated Retail Tariffs and advice from Halcrow on the appropriate drivers of energy use;

(c) a reduction in estimates of employee expenses, to bring QUU in line with its peers and for the expedited separation program. Forward estimates are correspondingly reduced and to reflect the completion of one-off new initiatives which are due to conclude in 2012-13 and a forward labour productivity gain of 1.5% per annum;

(d) a reduction in corporate costs, based on a range of benchmarks that indicate corporate costs are above efficient levels; and

(e) a reduction in other materials and services, to reflect Halcrow's view of the more likely costs to be incurred under the shift in emphasis to planning maintenance and noting that longer term savings are expected.

This results in a net adjustment of $14.15 million to operating costs in 2012-13, or 5.2% of non-bulk operating costs.

The Authority supports QUU's pursuit of operating efficiencies and considers that QUU should continue to seek operational efficiencies in 2012-13 and beyond as it achieves economies of scale and greater integration.

1.11 Total Costs

The Ministerial Direction requires the Authority to monitor the entities' revenues with regard to the Authority's assessed MAR, which is based on the total costs of carrying on the activity.

Total costs identified earlier have not been adjusted for any revenue offsets required to calculate the MAR and include:

(a) operating and maintenance costs, including tax;

(b) return on capital; and

(c) return of capital, allowing for depreciation of assets over time.

QUU's Submission

QUU identified its estimate of total prudent and efficient costs for water and wastewater for 2010-11, 2011-12 and 2012-13 on a single year or 'unsmoothed' basis.

Table 1.92: QUU Total Costs ($m)

	QUU Water Costs 2011-12	*%*	*QUU Waste-water Costs 2011-12*	*%*	*QUU Water Costs 2012-13*	*%*	*QUU Waste-water Costs 2012-13*	*%*
Bulk Water Costs	$219.05	41.6%	-	-	$269.82	43.7%	-	
Distribution and Retail Costs								
Other operating costs	$80.41	15.3%	$156.67	29.7%	$112.40	18.2%	$152.97	28.3%
+ Tax	$0.00	0.0%	$4.56	0.9%	$0.05	0.0%	$5.81	1.1%
+ Return on Capital	$172.51	32.8%	$248.96	47.2%	$178.49	28.9%	$258.75	47.9%
+ Return of Capital	$54.35	10.3%	$117.12	22.2%	$56.80	9.2%	$122.96	22.7%
Total Costs	**$526.31**		**$527.31**		**$617.56**		**$540.49**	

Source: QUU (2010) and QUU (2011).

Authority's Analysis

On the basis of the Authority's analysis of the RAB, asset lives, cost of capital and operating and maintenance costs, the Authority calculated the total costs of carrying on QUU's water and wastewater activities for 2012-13.

In doing so, and as for 2010-11 and 2011-12, the Authority calculated single year or 'unsmoothed' estimates, to allow for comparison with QUU's revenues and costs, which were set on this basis.

For both water and wastewater, the Authority's estimate of total costs is below QUU's estimate. However, the difference is not large.

Key differences between QUU's submitted costs for 2012-13 and the Authority's arose from:

(a) bulk water costs – the Authority has slightly higher bulk water cost estimates due to the Authority's revised demand volumes for 2012-13;

(b) other operating costs – the Authority has slightly lower estimates of other distribution and retail costs due to adjustments to electricity costs, employee expenses, corporate costs and other materials and services;

(c) tax – the Authority's estimate of tax payable for both water and wastewater are slightly lower than QUU estimates. For wastewater, the Authority's estimate (of $5.47 million) is lower than QUU's (of $5.81 million), while for water the Authority estimates that there will not be any tax payable while QUU estimates a tax cost of $0.05 million will be incurred;

(d) the return on capital – the Authority has slightly higher cost estimates than QUU. Although the same WACC of 9.35% was adopted by the Authority and QUU, the Authority applied it to a slightly higher asset base (as noted above); and

(e) the return of capital – the Authority has marginally lower estimates.

Table 1.93: Comparison of QUU and QCA Costs for 2012-13 ($m)

	Water QUU Costs	*Water QCA Costs*	*QCA % of total*	*Wastewater QUU Costs*	*Wastewater QCA Costs*	*QCA % of total*
Bulk Water Costs	269.82	270.33	44.33%			
Distribution and Retail Costs						
Other operating costs	112.40	105.40	17.28%	152.97	145.30	27.35%
+ Tax	0.05	-		5.81	5.47	1.03%
+ Return on Capital	178.49	178.37	29.25%	258.75	258.64	48.68%
+ Return of Capital	56.80	55.69	9.13%	122.96	121.75	22.92%
Total Costs	**617.56**	**609.79**	**100.00%**	**540.49**	**531.16**	**100.00%**

Source: QUU (2012) and QCA calculations.

1.12 Revenues for 2012-13

For price monitoring purposes, QUU's revenues at the time of price setting form the relevant forecast revenues. These revenue forecasts for 2012-13 are consistent with 2012-13 prices.

QUU's submission

QUU's revenue forecasts for water and wastewater (as at the time of price setting) are shown in Table 1.94.

Table 1.94: QUU's 2012-13 Revenue Forecasts for Water and Wastewater ($m)

	QUU Revenues
Water	455.63
Wastewater	379.04
Total revenue	**834.67**

Source: QUU (2012).

1.13 Comparing Revenues with MARs

Under the Ministerial Direction and the accepted SEQ Interim Price Monitoring Framework (QCA 2010), the Authority must compare the entities' revenues with the MAR calculated by the Authority.

The MAR is based on the Authority's estimate of total efficient costs of carrying on a water and wastewater activity. The MAR is calculated using the Authority's estimate of total costs less relevant deductions to ensure no double counting of inflationary gain and capital

contributions. Under the Direction, the entities have the choice of adopting a revenue offset or asset offset approach to capital contributions.

QUU's Submission

QUU's estimate of the total costs of carrying on its water and wastewater activities in 2012-13 is shown in the table below. QUU has continued to apply a revenue offset approach to the treatment of capital contributions.

QUU submitted that:

(a) for 2010-11, QUU over-recovered against the MAR by 0.3%. An under-recovery for water (of 5.5%) was more than offset by an over-recovery in wastewater (6.9%). QUU did not seek to carry over any over-recovery from 2010-11; and

(b) for 2011-12, QUU was forecasting an under-recovery of 5.8%. QUU did not seek to carry over any forecast under-recovery from 2011-12 in its budget for 2012-13 (see further below).

For 2012-13, QUU is budgeting under-recovery in both water and wastewater activities with total under-recovery of $69.72 million or 7.7%.

Table 1.95: QUU's 2012-13 Total Costs and Total Revenues ($m)

	Water QUU 2012-13	***Wastewater QUU 2012-13***	***Total***
Total Costs (QUU)	617.56	540.49	1,158.05
less Indexation (QUU)	(47.34)	(68.63)	(115.97)
less Capital contributions (QUU)	(54.92)	(82.77)	(137.69)
Total Costs (QUU)	**515.30**	**389.09**	**904.39**
Total Revenues (QUU)	455.63	379.04	834.67
Total Revenues less Costs (QUU)	**(59.67)**	**(10.05)**	**(69.72)**
% of Total Costs (QUU)	**(11.6%)**	**(2.6%)**	**(7.7%)**

Source: QUU 2012.

QUU stated that it proposed to implement an unders and overs mechanism, from the period in which price caps have been imposed on the business (i.e. from 2011-12). QUU stated that the price cap has restricted its ability to impose cost-reflective prices putting QUU's financial position under pressure.

QUU noted that its under/over-recovery position in 2011-12 will be finalised when actual information is available. QUU noted it intended to discuss the proposed unders and overs mechanism with the Authority in more detail to establish clear processes for how such a mechanism would work. Further, the most appropriate glide path for any significant under-recovery that would have a material impact on prices.

In response to further queries, QUU noted that the size of its under-recovery in 2012-13 is significant and the decision to ease financial pressure on its customers through the freezing

of prices had an immaterial effect on the level of under-recovery (given that CPI was so low). QUU also noted that the freezing of prices only applied to residential customers.

Authority's Analysis

A comparison of QUU's forecast revenues with the MAR based on the Authority's estimate of the total costs of carrying on QUU's water and wastewater activities is provided in the table below. The Authority has not carried over any under- or over-recovery from previous years, consistent with QUU's approach.

In principle, the Authority supports an NPV neutral glide path to achieve full cost recovery, wherever possible. However, an NPV neutral glide path is not always possible, particularly in the context of significant price rises, without prices in the final year being substantially in excess of their efficient level, requiring transitioning (down) in the next period, as noted in the Authority's SEQ Price Monitoring Framework Final Report. Further, 'unders and overs' schemes in regulatory pricing are typically based on actual data.

The Authority notes that while actual data for 2010-11 is now available, QUU does not propose to include this (small over-recovery) in its under and overs regime. QUU's reasoning is that this is because the Government's price cap did not apply in 2010-11.

The Authority notes that QUU's approach would appear to limit the application of an unders and overs regime to the years in which a price cap applies (2011-12 and 2012-13).

The Authority notes that the underlying rationale of QUU's proposal would appear to be that QUU's pricing and recovery position in an uncapped environment is an exercise of its discretion. That is, if QUU under-recovers against the MAR it will forego these revenues. If QUU over-recovers the MAR this is also an exercise of its discretion and should not be offset against future under-recoveries.

Under a price monitoring approach in which the objective is to constrain the exercise of market power in a light-handed manner, the Authority is inclined to accept that under-recovery may be the result of a legitimate exercise of QUU's discretion to forego these revenues and accept a lower rate of return. Where this does not jeopardise the financial viability of the entity this is a legitimate business decision.

However, the Authority is not inclined to accept that over-recoveries are a legitimate expression of a regulated entitie's discretion. Normal regulatory practice would be to net off under- and over-recoveries against the MAR through an unders and overs regime. However, an unders and overs regime is not a necessary component of a MAR.

Furthermore, the Authority notes that QUU has not priced to the level of the cap in 2011-12 and 2012-13. It would appear that QUU has exercised its discretion and has not been constrained by the price cap in these years.

As in previous years, the Authority notes it is not in a position to provide guidance on any particular unders and overs regime or glide path without first thoroughly examining the detailed data, modelling and assumptions underpinning it. The appropriateness of a glide path typically hinges on the level of over-recovery sought in the later years of the scheme, and the Authority does not have this longer term information. The Authority has calculated a 2012-13 MAR pending this detailed information.

Table 1.96: Comparison of Revenues and the Authority's MAR ($m)

	Water 2012-13	*Wastewater 2012-13*	*Total*
Total Costs (QCA)	609.79	531.16	1,140.95
less Indexation (QCA)	(47.30)	(68.59)	(115.88)
less Capital contributions (QCA)	(54.92)	(82.77)	(137.69)
Total Costs (QCA MAR)	507.57	379.8	887.37
Total Revenues (QUU)	455.63	379.04	834.67
Total Revenues less Costs (QCA)	**(51.94)**	**(0.76)**	**(52.70)**
% of Total Costs (QCA)	(10.23%)	(0.20%)	(5.94%)

Source: QCA calculations.

The Authority's analysis indicates that QUU's estimate of revenues falls below the Authority's MAR of $887.37 million by $52.70 million (or 5.94%). Water revenues fall below the MAR of $507.57 million by $51.94 million or 10.23% while wastewater revenues fall below the MAR of $379.8 million by $0.76 million or 0.20%.

The Authority has also estimated the amount of revenue that the Authority expects QUU will receive in 2012-13 based on QUU's prices and the Authority's estimated demand. This estimate ensures that revenues and expenditure are based on consistent demand figures.

The Authority's estimate of the water revenues that QUU will receive is slightly higher than QUU's, as the Authority's water demand estimates are higher due to expected rebound in water demand and slightly higher connections. The Authority's estimate of the wastewater revenues that QUU will receive is slightly higher than QUU's, due to the Authority's slightly higher connections.

The Authority further notes that its estimates of QUU's revenues for water ($456.52 million) and wastewater ($379.72) also fall below the Authority's MAR.

On this basis, the Authority finds that there is no evidence of an exercise of market power in 2012-13.

Table 1.97: Further Comparison of Revenues and the QCA MAR ($m)

	Water 2012-13	*Wastewater 2012-13*	*Total*
Total Costs (QCA MAR)	**507.57**	**379.80**	**887.37**
Total QCA Expected Revenues	**456.25**	**379.72**	**835.97**
Difference	(51.32)	(0.08)	(51.40)
% of Total Costs (QCA)	(10.11%)	(0.02%)	(5.79%)

Source: QCA calculations.

1.14 Costs, Revenues and Prices

The reconciliation of costs, revenues and average prices is outlined below.

Table 1.98: Costs and Revenues ($m)

	QCA Water 2011-12	*QCA Wastewater 2011-12*	*QUU Water 2012-13*	*QUU Wastewater 2012-13*	*QCA Water 2012-13*	*QCA Wastewater 2012-13*
Bulk Water Costs	$219.76		$269.82		$270.33	
Distribution and Retail Costs						
Other operating costs	$79.73	$154.00	$112.40	$152.97	$105.40	$145.30
plus Tax	$0.00	$6.04	$0.05	$5.81	-	$5.47
plus Return on Capital	$174.35	$251.59	$178.49	$258.75	$178.37	$258.64
plus Return of Capital	$54.76	$117.82	$56.80	$122.96	$55.69	$121.75
Total Costs	$528.60	$529.44	$617.56	$540.49	$609.79	$531.16
less Indexation	($46.23)	($66.71)	($47.34)	($68.63)	($47.30)	($68.59)
less Capital contributions	($56.56)	($81.85)	($54.92)	($82.77)	($54.92)	($82.77)
Total Costs (MAR)	**$425.80**	**$380.88**	**$515.30**	**$389.09**	**$507.57**	**$379.80**
Total Revenues (QUU)	**$405.57**	**$370.37**	**$455.63**	**$379.04**	**$455.63**	**$379.04**
Over / (Under) recovery	**($20.24)**	**($10.51)**	**($59.67)**	**($10.05)**	**($51.94)**	**($0.76)**

Source: QCA calculations, QUU (2011), QUU (2012).

Table 1.99: Average Prices

	QUU Water 2011-12	*QUU Wastewater 2011-12*	*QUU Water 2012-13*	*QUU Wastewater 2012-13*	*QCA Water 2012-13*	*QCA Wastewater 2012-13*
Total Revenues/MAR ($m)	$405.57	$370.37	$455.63	$379.04	$507.57	$379.80
Volume (ML or connections)	108,913	493,383	115,392	500,621	115,612	500,922
Price ($/kL or $/connection)	**$3.72/kL**	**$750.67**	**$3.95/kL**	**$757.14**	**$4.39 /kL**	**$758.21**

Note: To calculate average prices the Authority has reduced revenues by the State Government bulk water rebate to residential customers. Using QUU's estimate of residential connections the rebate is $39.33 million, using the QCA estimate of residential connections the rebate is $39.35 million. Source: QCA calculations, QUU (2010), QUU (2011).

1.15 Findings

For QUU:

(a) the retail and distribution component of water and wastewater prices for households and small business increased by less than the CPI cap of 1.3% imposed by the Queensland Government;

(b) total revenues for non-capped services increased by 1.2%, less than the increase in the total costs of the relevant activities (4.2%);

(c) bulk water costs account for 43.7% of QUU's proposed total water costs in 2012-13. Retail and distribution costs account for 56.3% with operating costs accounting for 18.2%, return on capital for 28.9% and return of capital 9.2%;

(d) for wastewater, retail and distribution operating costs account for 28.3%, return on capital accounts for 47.9%, tax for 1.1% and return of capital 22.7%; and

(e) the most significant increases in QUU's proposed costs in 2012-13 relate to a 23.2% increase in bulk water costs and a 28.5% increase in tax.

The Authority's estimate of the costs of supply is slightly lower than QUU's for 2012-13. However, QUU's estimate of revenues will be below the Authority's estimate of MAR in 2012-13. In this regard:

(a) QUU's estimate of water revenues is below the Authority's MAR of $507.57 million by $51.94 million or 10.23%;

(b) QUU's estimate of wastewater revenues is marginally below the Authority's MAR of $379.80 million by $0.76 million or 0.20%; and

(c) as a whole, QUU's revenues are below the Authority's MAR of $887.37 million by $52.70 million (or 5.94%).

The Authority has also estimated the amount of revenue that QUU will receive in 2012-13 based QUU's prices and the Authority's estimated demand. The Authority's estimate of total expected QUU revenues ($835.97 million) is below the Authority's estimated MAR of $887.37 million.

2. UNITYWATER

2.1 Introduction

This is the third year of price monitoring of retail/distribution water and wastewater prices in SEQ by the Authority.

2.2 Ministerial Direction

Under the Ministerial Direction (**Appendix A**), the Authority must for QUU and Unitywater (the entities):

(a) monitor the annual change in prices of distribution and retail water and wastewater services for households and small business customers having regard to the CPI price limit (price cap) as described in relevant legislation; and

(b) monitor the annual change in prices for water and wastewater services not included in the CPI price limit (non-capped services), having regard to the change in revenue from these services compared to the change in the total prudent and efficient costs of carrying on the relevant activity.

The Authority must also:

(a) provide timely and transparent information to customers about the costs and other factors underlying the provision of water and wastewater services, including distinguishing the bulk and distribution/retail costs to the extent that it is possible given the availability and reliability of relevant information; and

(b) monitor the entities' revenue from water and wastewater activities against their total prudent and efficient capital and operating costs (the MAR)[29].

2.3 Background

Unitywater provides water and wastewater services to commercial customers and an estimated residential population of around 702,517 in the Moreton Bay and Sunshine Coast region. Key characteristics of Unitywater's service and asset base, as provided by Unitywater in its 2012-13 submission, appear in Table 2.1 below.

[29] In its submission, the Moreton Bay Regional Council stated that as the CPI price limit applies for 2012-13, the terms of reference in regards to the investigation appear to be wider than required and should be restricted purely to compliance with the CPI cap. The Council submitted that a complete review of prices and maximum allowable revenue seems overly onerous given the legislative price cap.

The Authority notes that the Direction encompasses both compliance with the CPI cap and a review of revenues against the MAR.

Table 2.1: Unitywater Service and Asset Base

	Moreton Bay	*Sunshine Coast*	*Total*
Population	385,264	317,253	702,517
Residential Water Connections	145,061	119,282	264,343
Non-Residential Water Connections	4,009	9,062	13,071
Water reservoirs	n/a	n/a	108
Pump stations (water and sewage)	n/a	n/a	856
Water supply network (km)	n/a	n/a	5,542
Recycled water network (km)	n/a	n/a	79
Wastewater network (km)	n/a	n/a	5,352
Wastewater treatment plants	8	10	18

Note: n/a not available. Source: Unitywater (2012) and Unitywater 2011-12 Annual Report.

A map of the area serviced by Unitywater is shown in Figure 2.1 below.

Figure 2.1: Unitywater Service Area

Source: Unitywater (2011).

2.4 Prices and Revenues

2.4.1 Prices for Households and Small Businesses

Capped Prices for 2012-13

In 2011, a CPI price cap was applied to the retail and distribution component of water and wastewater charges in 2011-12 and 2012-13 for specified customers, under *the South East Queensland Water (Distribution and Retail Restructuring) Act 2009*. The specified customers include residential and small business customers and any other customer who passes on charges to either of these groups.

For 2012-13, the CPI cap is 1.3%, and is applied to the fixed and volumetric components of charges - after deducting council rebates and subsidies.

Consistent with the approaches adopted by the entities, the Authority has reviewed all charges against the CPI cap except those specifically excluded (non-capped prices) which are dealt with further below.

The Authority notes that prices are set for a particular year in the preceding year and reflect an entity's intended (budget) revenues and costs for the following year.

On 13 April 2012, Unitywater announced that the retail and distribution component of residential and non-residential water and wastewater prices were frozen across all council areas in 2012-13 (**Appendix C**). The price freeze applied to all prices, except for trade waste, recycled water and sundry charges (these are not subject to the CPI cap, see below).

Unitywater stated that it was able to deliver a price freeze two years after commencing operating after making a concerted effort to keep costs down and realising the benefit of increased economies of scale[30]. Unitywater referred to cost savings in tendering and procurement processes and in bundling projects across both regions.

Changes in council subsidies must also be considered when assessing changes in charges. The Moreton Bay Regional Council has continued to subsidise residential fixed access charges in 2012-13[31]. However, Unitywater advised that the quantum of the rebate has been reduced, such that the fixed component of residential water and wastewater charges paid by customers will increase by 1.3%.

The Authority considers that Unitywater has complied with the CPI price cap for 2012-13.

Residential Bills

The retail and distribution component of residential prices is capped, as noted above. To facilitate comparisons with prices prevailing in 2011-12, the Authority has continued to compare increases in residential bills[32].

[30] Unitywater Media Release 'Unitywater delivers price freeze for 2012-13' 13 April 2012.
[31] Moreton Bay Regional Council Budget and Operational Plan 2012-13, p. 4.
[32] As in last year's price monitoring report, the residential bills used in the Authority's analysis were estimated on the basis of usage of 200kL of water per year, as this is the basis adopted for national performance reporting (NWC, 2010). As there is no national standard for wastewater, the analysis was based on the approach adopted in each council area. For both Moreton Bay and Sunshine Coast the bill is based on a fixed access charge. The same approach has been adopted by the Queensland Water Commission (QWC) in its analysis of residential water and sewerage bills (QWC 2011).

The Authority did not calculate a residential bill consistent with Authority estimates of efficient costs in 2012-13. Costs are not disaggregated to this level by Unitywater.

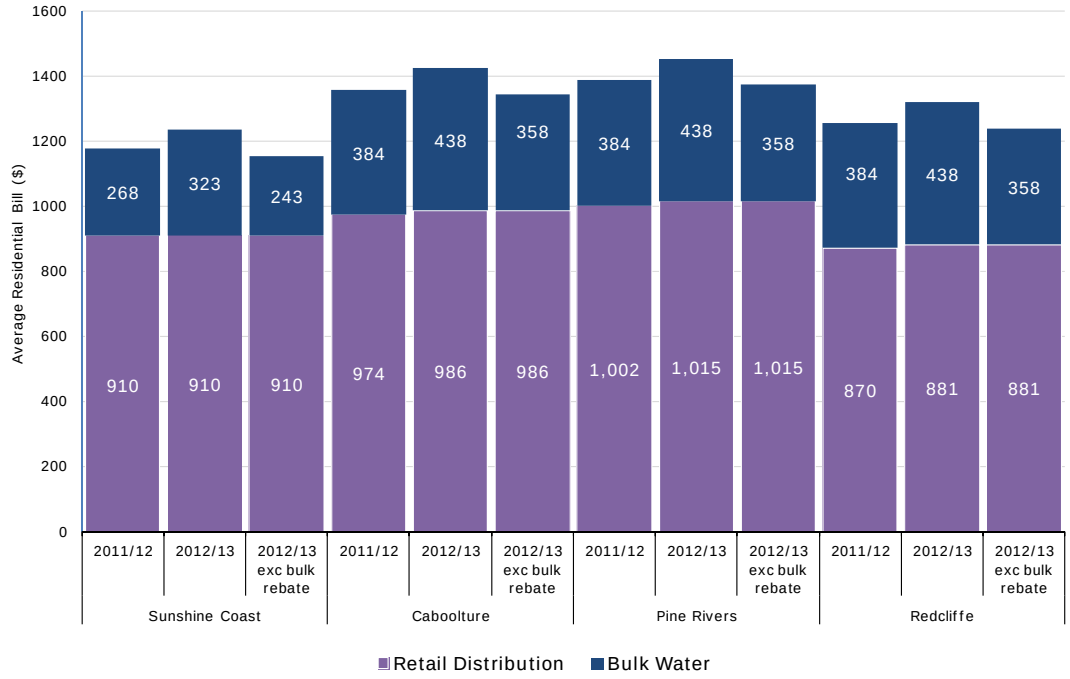
In 2012-13, the Queensland Government has introduced a Bulk Water Rebate which is a one-off payment of $80 to be applied as a deduction on the first residential bill of 2013 (DEWS 2012).

The Authority has calculated residential bills for 2012-13 and then separately identified the impact of the bulk water rebate.

Total residential bills for water and wastewater services would have increased from $55 to $67 per year (around 5%), primarily as a result of the increase in the bulk cost of water without the $80 bulk water rebate. As noted above, Unitywater froze the retail and distribution component of residential prices however, Moreton Bay reduced its subsidy on the fixed charge. As the fixed charge is a component of the total bill, customers in Moreton Bay face an increase in the retail and distribution component of the bill of less than 1.3%.

Bulk water accounts for a smaller proportion of residential bills than for average water prices. The residential bill includes water and wastewater, and wastewater has no bulk water component.

Chart 2.1: Total Residential Bills



Notes: '2012-13 exc bulk rebate' is the 2012-13 residential bill net of the State Government Bulk Water Rebate. The Moreton Bay Council rebate is netted out of the 2011-12 and 2012-13 bills for Caboolture, Pine Rivers and Redcliffe. Based on metered usage of 200kL per annum. The retail/distribution component includes water and wastewater. Source: Unitywater (2012) and QCA calculations.

2.4.2 Prices for Other Users (Non Capped Prices)

Under the Direction, the Authority must monitor the annual change in prices of non-capped services, having regard to the change in revenue from these services compared to the change in the prudent and efficient costs of the relevant activity.

For the purposes of the comparison, the 2011-12 and 2012-13 revenues and costs are those set at the time prices are determined. Essentially, they reflect an entity's intended (budgeted)

level of cost recovery. The Authority compares the change in revenues for non-capped services with the change in the Authority's estimates of prudent and efficient costs for the relevant activity.

Under the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009*, the CPI price cap does not apply to trade waste, seepage[33] , or recycled water services. The (then) QWC has also advised that one-off sundry services are not capped.

Trade waste services are included in the wastewater activity[34] provided by Unitywater. In 2011-12, Unitywater introduced three standardised categories of trade waste customers across its council areas. Unitywater noted that its trade waste pricing includes three principle components – permit fees, volumetric charges and strength charges. Unitywater advised that harmonisation of these components across its council areas is being progressed.

Recycled water is included in the water activity. In 2012-13, prices increased across council areas, as part of a price path designed to recover operational costs of providing recycled water. Revenues increased by 3.22%.

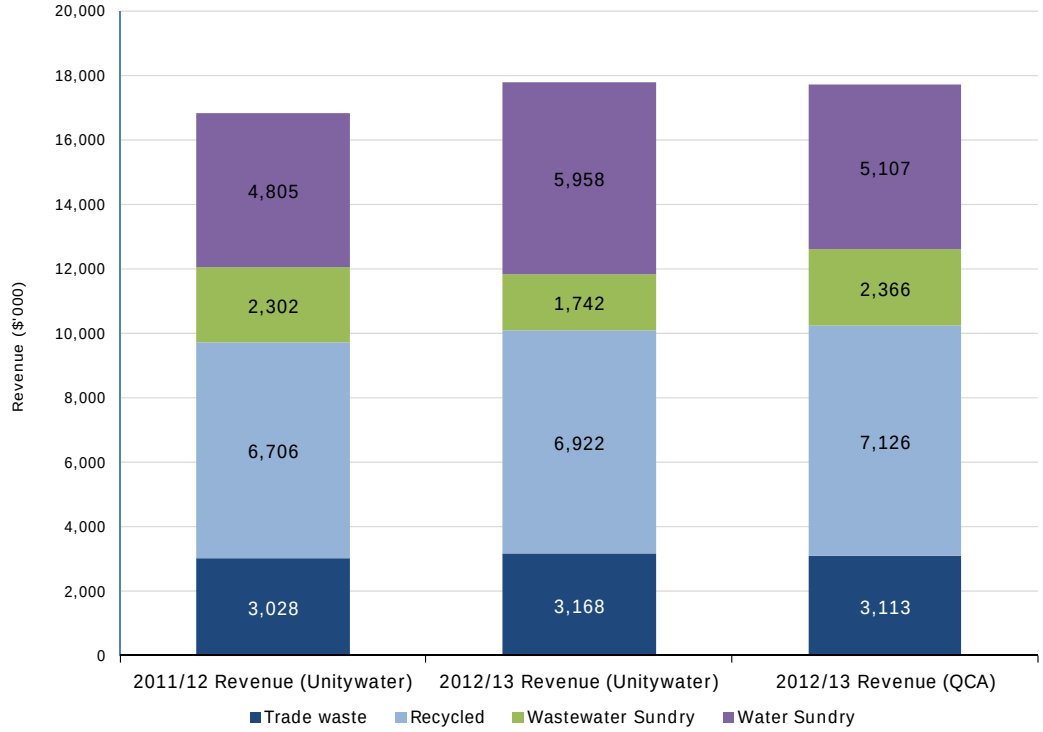
Sundry services relate to both water and wastewater activities. Sundry revenue forecasts for 2012-13 are higher than previous forecasts for 2011-12. However, this appears to be due to under-forecasting in 2011-12. The use of more recent information provided by Unitywater in its 2012-13 submission regarding 2011-12 revenues for sundry services indicates an increase of 8.3%. There may also be an allocation issue, with revenues falling by 24% in wastewater and increasing by 24% in water. This issue will be investigated further for the Final Report.

When more recent information on sundry revenues is adopted, the change in total non-capped revenues (5.64%) is slightly higher than the change in costs (5.18%) of the underlying activities. However, the difference is not material. The change in Unitywater revenues compared with the revenues implied by the increase in the Authority's estimate of prudent and efficient wastewater costs appears below.

[33] Seepage water is water that seeps from the ground into that part of a structure below ground level (e.g. tunnels and underground carparks). Unitywater does not provide services relating to the discharge of seepage water and does not accept seepage water as trade waste.

[34] As the 'activity' is a higher-level cost grouping, the costs of the relevant activity include the costs of capped and non-capped services relevant to that activity (see SEQ Framework Report 2010). The Direction does not require a comparison of non-capped revenues with the costs of providing non-capped services. Costs are not available on this disaggregated basis across all geographic areas.

Chart 2.2: Non-Capped Revenues ($'000)



Source: Unitywater (2011), QCA (2010) and QCA (2011).

Table 2.2: Increase in Non-Capped Revenues

	Unitywater 2011-12	***Unitywater 2012-13***	***QCA 2012-13***
Trade Waste Revenues ($m)	3.03	3.17	3.11
% change from 2011-12		4.64%	2.80%*
Recycled Water Revenues ($m)	6.71	6.92	7.13
% change from 2011-12		3.22%	6.27%[#]
Wastewater sundry ($m)	2.30[a]	1.74	2.37
% change from 2011-12		-24.34%	2.80%
Water sundry ($m)	4.81[a]	5.96	5.11
% change from 2011-12		24.00%	6.27%
Total Non-Capped Revenues ($m)	**16.84**	**17.79**	**17.71**
% change from 2011-12		**5.64%**	**5.18%**

*Note: * Increase in Wastewater MAR, as trade waste is included in the wastewater activity [#] Increase in Water MAR, as recycled water is included in the water activity. [a] More recent data on 2011-12 sundry revenues. Source: Unitywater (2012), QCA (2012).*

2.4.3 Average Prices

There is a wide range of prices set by Unitywater relating to the range of services provided to each of the previous council areas and customer groups in SEQ.

For broad comparative purposes, the Authority has noted the changes in average prices (as well as residential bills above). Average prices provide, at best, a broad overview of price changes.

The distribution and retail component of average water prices fell in 2012-13. For reasons identified further below, the average price charged by Unitywater differs from that implied by the Authority's analysis. Chart 2.3 and Chart 2.4, and Table 2.3 refer.

Prices are not necessarily set by the entities on the basis of costs alone. As noted above, Unitywater has frozen the retail/distribution component of prices.

Also indicated is the share of average prices accounted for by bulk water charges. It is assumed that, based on the Government's policy, the bulk water prices charged by the SEQ WGM are passed through to customers in full. There is no material bulk water component in wastewater prices.

Average prices were calculated by dividing total revenues by volumes – per kl (for water) and per connection (for wastewater)[35]. Revenues and volumes for 2011-12 reflect the information available at the time of setting 2011-12 prices (and correspond with the data published in the Authority's Final Report for 2011-12). Revenues and volumes for 2012-13 reflect the information available at the time of setting 2012-13 prices. Wastewater revenues include those derived from trade waste services.

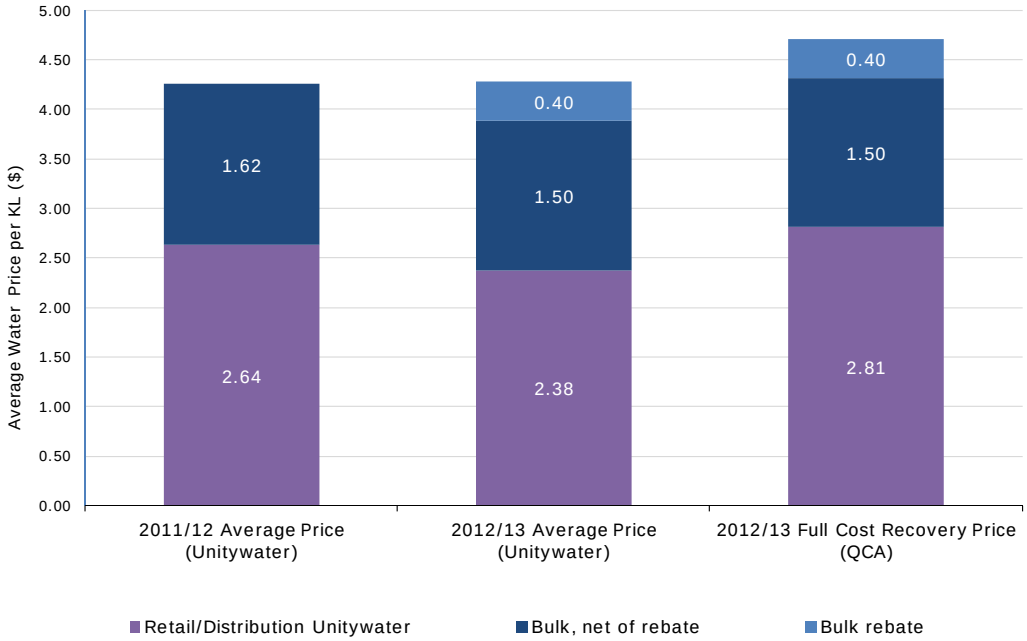
The impact of the bulk water rebate and the Moreton Bay Council rebate have been separately identified in the 2012-13 average price.

The Authority's analysis suggests that average annual water and wastewater prices are below those implied by full cost recovery for 2012-13. The Authority's higher (than Unitywater's) estimate of the average price for 2012-13 is primarily due to the inclusion of all prudent and efficient costs (discussed further below).

As noted in last year's SEQ Interim Price Monitoring Final Report for 2010-11, prices should ideally be set, and smoothed, over a longer period to avoid large annual variations.

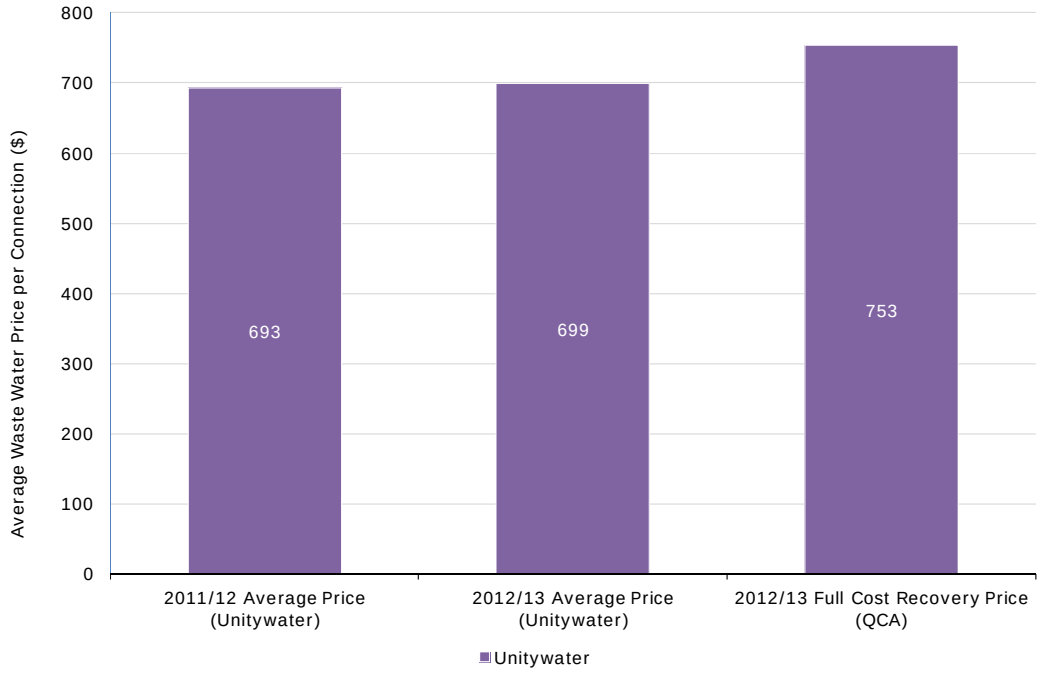
[35] The Australian Bureau of Statistics (ABS) adopts a similar approach to calculate an average water price in national water accounts – the ABS average price is derived by dividing a state's total residential water revenue ($) by residential water consumption (kL).(ABS, 2010).

Chart 2.3: Average Water Prices



Note: The impact of the bulk water rebate is separately identified in the 2012-13 average price. Source: Unitywater (2011 and 2012), QCA (see section 3.14).

Chart 2.4: Average Wastewater Prices



Source: Unitywater (2011 and 2012), QCA (see section 1.14).

Table 2.3: Average Prices[ab]

	Unitywater 2011-12	*Unitywater 2012-13*	*QCA Full Cost Recovery 2012-13[#]*
Water ($/kl)	4.25	4.28	4.71
% increase from 2011-12, attributable to:		0.63%	10.76%
Bulk water cost increases		6.70%	6.39%
Distribution and retail increases		-6.07%[c]	4.37%
Wastewater ($/connection)	693.19	698.99	753.30
% increase from 2011-12		0.84%	8.68%

[a] Average water price = Annual water revenue ($) / total kl sold . [b]Average wastewater price = Annual wastewater revenue ($) / total connections. [c] A fall in the average price arises as the increase in revenue (numerator) is less than the increase in demand (denominator). [#]Average QCA price = QCA MAR / QCA kL (water) or connections (wastewater). Percentages reflect data not rounded for the purposes of this table. Source: Unitywater (2012), Unitywater (2011), QCA calculations.

2.5 Demand

The cost of providing water and wastewater services is affected by the quality and the quantity of the services provided. For the purposes of the current review, the Authority has accepted the current standards of service.

Estimates of demand for water and wastewater have a direct impact on the prudency and efficiency of operating and capital expenditure and on the calculation of average prices.

Unitywater's Submission

Unitywater noted that key determinants of demand for water and wastewater services include factors such as population growth, implementation of demand policies such as water restrictions, and changes in consumer behaviour over time.

Unitywater submitted it has taken note of studies on the price elasticity of demand, as well as the need to better understand demand elasticity and the broader demand function. Unitywater considered water demand in aggregate to be highly inelastic at the current price. However, Unitywater recognised that there is potential for changes in customer behaviour in relation to discretionary water use. Unitywater noted its progress in addressing the Authority's consultants' suggestions and recommendations in previous years' reviews in its general approach to forecasting and other initiatives (outlined further below).

The general approach adopted by Unitywater to forecast residential water volumes is based on estimating connected population and multiplying this by an underlying level of consumption on a per person basis (l/p/d). For the non-residential sector, a similar approach was applied using EP[36].

[36] EP estimate demand for any land use type in terms of the demand from a person living in a detached dwelling. For example, a student's demand is deemed to be the equivalent of 10% of the demand of a person living in a detached dwelling. A school with 1000 students would be deemed to have demand of 100EP.

Unitywater listed a number of demand-related initiatives and plans, such as:

(a) the establishment of an external working group involving other distribution-retail entities and the SEQ bulk water entities (to be merged by 1 January 2013). The working group is focussed on finding common ground on demand forecasting methodologies and predictions and the potential for shared work, technology and processes;

(b) an internal working group, focussed on addressing SKM's outstanding suggestions;

(c) the Business Plan and Methodology Proposal documenting the establishment and ongoing maintenance of Unitywater's demand/load models; and

(d) the Unbilled Water Project (UWP) to quantify and classify the non-revenue water component of the water balance, which is a challenge for all water businesses as it has multiple sources such as fire fighting, flushing and cleaning, leaks, unmetered facilities and theft. The UWP will allow Unitywater to benchmark its proportion of non-revenue water against other water businesses and to identify self-funding requirements.

Population and Connections[37]

Unitywater's forecasting of water volumes is driven off a base population connected to the network in 2011-12. The base connected population was estimated using spatial population data from council planning schemes combined with a geographic overlay of the Unitywater service area. Growth in connected population is based on the growth rates projected by the OESR's medium population series.

Unitywater extracted a base estimate of connections from its billing system. Growth in connections is based on OESR medium dwelling series. Connections are used to forecast revenues from fixed access charges.

Per Capita demand – Litres Per Person Per Day (l/p/d) and Litres Per Connection Per Day (l/c/d)

Unitywater estimated per capita water demand for residential and non-residential customers in each council area. Growth in average residential consumption was based on the growth rate in SKM's recommendations in the Authority's 2011-12 review, with a cap of 200 l/p/d applied to reflect the voluntary target under the SEQ Water Strategy. Average consumption for the non-residential sector was increased at a much lower rate.

Unitywater's estimate of non-revenue water encompasses network losses, unbilled water and theft. Unitywater assumed losses of 22 l/p/d in 2012-13, which Unitywater expected to fall to 18 l/p/d by 2020-21 due to various projects aimed at their reduction.

Unitywater forecast wastewater volumes for non-residential customers in Maroochy, as only these customers are charged on this basis. For these customers, wastewater volume is calculated as a percent of metered water consumption based on set discharge factors ranging from 5% to 90%. Unitywater assumed wastewater volume for Maroochy to grow at the same rate as the growth rate of the Sunshine Coast water demand.

[37] Information on Unitywater's approach is drawn from Unitywater's submission and SKM (2012).

Authority's Analysis

The Authority engaged SKM to review the appropriateness of Unitywater's demand forecasts for water and wastewater activities from 1 July 2012. SKM was required to determine whether the demand forecasts have been developed using appropriate forecasting methodologies and reflect reasonable data assumptions. SKM was also required to report on whether the issues identified by the Authority in its SEQ Interim Price Monitoring Final Report for 2011-12 have been addressed.

In relation to demand forecasting, the Authority recommended that Unitywater should:

(a) document its approach to forecasting demand for all purposes and establish processes for the collation of data; and

(b) take into account the response of consumers to increasing prices (that is, estimate the price elasticity of demand) when estimating future consumption.

The Authority has provided the previous 2011-12 forecasts based on information available at the time of pricing in 2011-12 and published in the SEQ Interim Price Monitoring Final Report for 2011-12. These previous forecasts are shaded to clearly distinguish them from updated 2011-12 forecasts based on the more recent information now available.

Methodology

SKM noted that current demand forecasting approaches are relatively unsophisticated. In the current circumstances, where there is a lack of historical data and uncertainty about demand outcomes following the lifting of restrictions, SKM considered that this is an appropriate approach.

SKM noted that Unitywater had made a number of positive changes to its methodology based on its recommendations in the 2011-12 price monitoring review. For example, Unitywater:

(a) has separately estimated average consumption for residential and non-residential users, and has factored in a rebound in residential consumption; and

(b) has estimated connections using data from its billing system, replacing the previous concept of 'equivalent base charges' representing the numbers of charges collected from residential and non-residential users that are equivalent to a standard residential connection.

Overall, SKM considered the general methodology adopted by Unitywater for pricing purposes was reasonable for 2012-13, except for the use of EP in forecasting non-residential water use. SKM does not support the use of EP for the non-residential sector for short term forecasts, as the demand per EP is not equal to an equivalent demand from a person in the residential sector (which EP measures and which reflects long term averages).

In addition, SKM notes that demand per person in the residential sector is growing (rebounding from restriction levels) while demand per EP in the non-residential sector is not. Further, that using connections and average consumption instead draws on data that the utility collects in the course of its business. This eliminates potential sources of error.

Therefore, SKM recommended basing the non-residential water demand forecast on connections, rather than EP. The Authority notes that should this recommendation be pursued by Unitywater it may also be preferable for residential water use to be based on observed connections, rather than population estimates. An assumption is then required on

the occupancy rate, this can be drawn from OESR data. This is the approach adopted by QUU.

SKM made further adjustments to reflect its view of the most appropriate application of the demand forecasting methodology in 2012-13 and other minor changes. These are discussed further below.

SKM also recommended the entities should move to improve their data collection and increase the sophistication of their demand forecasting approach over time. SKM identified three main approaches for improving the entities' demand forecasting:

(a) Sydney Water panel data-based analysis. This analysis estimates the impact on water demand from price changes (price elasticity), water efficiency program participation and the implementation of water wise rules.

    The Authority notes that external expert stakeholders at an IPART demand forecasting workshop agreed that Sydney Water's model was likely to be the best available approach to forecast water demand (IPART 2012). IPART accepted Sydney Water's proposed approach;

(b) end-use modelling approaches. End-use modelling generates forecasts of future demand to be aggregated based on estimates of the individual end-uses of water. The Authority notes that Victorian retail water entities adopt this approach (for example, see South East Water 2012);

(c) other types of econometric analysis, including a range of regression-based cross-sectional and time series approaches. These can be used to complement other forecasting approaches.

SKM considered that Sydney Water panel data-based analysis was not appropriate for SEQ, as the entities do not have access to detailed information about which of their customers have participated in retrofit and rebate programs, which of their customers remain in the owner-occupier category and a host of other variables collected through longitudinal survey by Sydney Water. SKM also considered the cost of this approach.

SKM noted that the entities do have access to a number of end-use monitoring studies, and econometric modelling could complement end-use modelling approaches.

SKM recommended that the entities move to adopt end-use modelling. SKM identified the features of such a model, and suggested a series of practical steps that would allow the entities to incorporate end-use modelling in demand forecasting in 2014-15.

The Authority also notes that the NWC and WSAA have supported the development of an end-use model to assist water services providers across Australia and recommend the use of such a model (Turner et al 2010)[38]. The Authority understands that the Queensland Government used an end-use model in the formulation of the SEQ Water Strategy.

However, as noted above, a recent expert workshop identified Sydney Water's model as the best available approach. Further, in its 2011-12 Final Report the Authority recommended

[38] Turner, A., Willets, J., Fane, S., Giurco, D., Chong, J., Kazaglis, A., and White S., 2010. Guide to Demand Management and Integrated Resource Planning. Prepared by the Institute for Sustainable Futures, University of Technology Sydney for the National Water Commission and the Water Services Association of Australia, Inc.

that Unitywater should explicitly include price elasticity in demand forecasting once rebound is achieved[39].

A longitudinal data based approach would enable panel data-based analysis as adopted by Sydney Water, which recognises the likelihood of price elasticity being dependent on home ownership status of the occupants, the impact of property size and household income on water demand, household habit formation and a host of other factors. Alternatively, end-use modelling appears to be particularly suited where entities are implementing demand management options and want to assess their impact. Econometric analysis can also inform an evaluation of scarcity pricing.

Given the uncertainty and lack of data at this point in time, it would seem appropriate to develop and compare different approaches to demand forecasting in SEQ. The Authority will further consider the most appropriate way forward for its Final Report.

For 2012-13, the Authority considers that Unitywater's demand forecasting methodology adopted for pricing purposes can be considered to be appropriate to the purpose of the forecast and the availability of current information, although non-residential water use should be based on connections rather than EP.

The Authority considers that:

(a) Unitywater's general demand forecasting methodology for 2012-13 is reasonable, although non-residential water use should be based on connections.

(b) Going forward, explicit inclusion of price elasticity for water should be incorporated once the estimated level of rebound is achieved. The entities should develop and compare different approaches to demand forecasting for their future use in SEQ.

Residential Water Connections

As noted above, Unitywater estimated base (current) residential connections from its billing system for the purpose of forecasting revenue from fixed access charges. Growth in connections is based on the OESR medium dwelling series. To support its use of the medium series, Unitywater provided advice from the OESR, stating that:

> *while actual population change may track close to either the low or high series in the short-term, the expectation is that the most likely outcome will be that overall population change over the entire projection period will reflect the medium series.*

[39] In the 2011-12 Final Report the Authority considered that Unitywater should take the impact of price increases on demand into account in preparing its price path for the six-year period from 1 July 2013, as SKM has forecast a return to more normal levels of consumption during this period.

Table 2.4: Unitywater Residential Water Connections

	2011-12 Submission	*2012-13 Submission*				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR[1] 2011-15*
Moreton Bay	137,397	145,061	148,534	152,091	155,733	2.4%
Sunshine Coast	136,387	119,100	122,029	124,839	127,713	2.4%
Unitywater total	**273,784**	**264,161**	**270,563**	**276,930**	**283,446**	**2.4%**

*Note: 2011-12 shaded data reflects Unitywater's forecasts for 2011-12 as published in the SEQ Price Monitoring Report for 2011-12 and is not comparable due to a change in methodology. * Estimated Actual [1]CAGR denotes compound annual growth rate. Source: Unitywater (2011 & 2012) data template, SKM (2012).*

SKM noted that due to the change in methodology in estimating connections, estimates of connections from Unitywater's 2011-12 submission (shaded in the table above) are not comparable to those in its 2012-13 submission.

SKM noted that in the Authority's Final Report for 2011-12, it considered that the May 2011 OESR forecasts should be adopted to inform final prices for 2011-12 and for price monitoring. The Authority also accepted OESR advice that its low population growth series is more representative of its short-term expectations than the medium series.

In January 2012, the OESR released updated dwellings data. SKM noted that Unitywater used this updated data in its demand forecasts, in particular the medium series.

In relation to the OESR advice cited by Unitywater, SKM agreed that the over the entire projection period (from 2011 to 2031) the medium series would indeed be the appropriate series to use. However, as price monitoring involves short term forecasts, there should be a review of which series is the most appropriate to use for this purpose.

For this year's review, SKM noted that ABS data released in July 2012 confirmed that actual population growth is more closely tracking the low population series for the Unitywater area as a whole. However, data for Moreton Bay appeared to align with the medium series. Given this scenario, while SKM would not dispute using medium growth for Moreton Bay, to be consistent with the overall low growth expected, the growth rate to be applied to the Sunshine Coast would need to be significantly below that projected by the OESR. SKM recommended using a 1% growth rate for the Sunshine Coast if the medium growth rate of 2% is applied to Moreton Bay. The Authority notes that this approach cannot be adopted as it uses data released in July 2012 which was not available at the time of setting prices for 2012-13.

SKM recommended continued use of the low series population growth data for both council areas.

Further, SKM noted a difference between Unitywater's and SKM's estimates of dwellings growth due to the difference in interpolation approach required to calculate dwellings in the years the lie between the published OESR data for 2010-11 and 2015-16. SKM originally considered a uniform annual increase in the number of connections while Unitywater interpolated using an annual percentage growth rate.

Given this, the Authority asked the OESR for its advice on the method of interpolation to arrive at dwellings estimates in the years that lie in between 2010-11 and 2015-16. The OESR advised a method which involves the use of annual population data and interpolated occupancy rates. SKM considered that OESR's advice represents the best available method, as it produces an annual dwellings estimate that is consistent with annual population projections. The OESR provides the State Government's official population forecasts and its advice on population and dwellings is based on expert advice and knowledge.

SKM estimated the annual growth in projected dwellings [low series] using Queensland Government projections (2011 edition) and OESR advice on interpolation method. The growth in dwellings differs annually over 2010-16. The annual growth rate in 2012-13 is the same as the compound annual growth rate over 2010-16 of 1.9% for both council areas.

Table 2.5: Residential Connections Growth Rates (%)[40]

	Unitywater 2011-12 Submission 2011-12	***Unitywater 2012-13 Submission 2012-13***	***SKM Dwelling[a] Low Growth 2010-16***
Moreton Bay	2.8%	2.4%	1.9%
Sunshine Coast	2.6%	2.4%	1.9%
Unitywater	**2.7%**	**2.4%**	**1.9%**

Note: 2011-12 shaded data reflects Unitywater's forecasts for 2011-12 as published in the SEQ Price Monitoring Report for 2011-12. a This growth rate is calculated by adjusting the OESR's medium dwelling growth series to take account of lower population growth reflected in the low population series. Source: Unitywater (2011 & 2012) data template, SKM (2012).

SKM applied the low growth rates to the 2011-12 residential connections data provided by Unitywater to forecast connections from 2012-13.

Table 2.6: Recommended Residential Water Connections

	2011-12 Review	***2012-13 Review***			
	2011-12	***2012-13***	***2013-14***	***2014-15***	***Growth in 2012-13***
Moreton Bay	136,784	147,848	150,551	153,329	1.9%
Sunshine Coast	135,706	121,511	123,782	126,166	1.9%
Total Recommended	**272,940**	**269,358**	**274,333**	**279,496**	**1.9%**
Unitywater Proposed	273,784	270,563	276,930	283,446	2.4%
Difference	**-844**	**-1,205**	**-2,597**	**-3,950**	**-0.5%**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12 and is not comparable due to a change in methodology. Source: SKM (2011 & 2012).

[40] Growth rates are the annual average compound rates.

The Authority accepts SKM's residential water connection estimates.

Residential Water Volumes

As noted above, Unitywater used connected population as the basis of forecasting residential water demand, with growth rates reflecting OESR medium population series.

Unitywater applied its estimate of connected population to its estimate of average residential consumption (l/p/d) to estimate residential water demand. Growth in average consumption was based on SKM's recommended growth rate in the 2011-12 review, with a cap of 200 l/p/d applied in each council to reflect the voluntary average consumption target set for SEQ. While the cap does not impact on the forecast for Moreton Bay, average consumption in the Sunshine Coast reaches the cap in 2013-14.

Unitywater's estimates of connected population, average consumption and water use are shown below.

Table 2.7: Unitywater's Proposed Residential Connected Population

	2011-12	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*CAGR 2011-16*
Moreton Bay	385,264	392,954	400,796	408,796	416,955	2.0%
Sunshine Coast	317,253	324,130	331,156	338,334	345,668	2.2%
Unitywater	**702,517**	**717,084**	**731,952**	**747,130**	**762,623**	**2.1%**

Source: Unitywater (2012)

Table 2.8: Unitywater Average Residential Use (l/p/d)

	2011-12 Submission	*2012-13 Submission*				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-16*
Moreton Bay	158	152	161	171	181	6.1%
Sunshine Coast	191	178	188	200	200	4.0%

*Note: 2011-12 shaded data reflects Unitywater's forecasts for 2011-12 from its 2011-12 Submission. This data is provided for comparison purposes only. * Estimated actual Source: Unitywater (2011 & 2012), SKM (2012).*

Table 2.9: Unitywater Residential Water Demand (ML/year)

	2011-12 Submission	*2012-13 Submission*				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-16*
Moreton Bay	19,027	22,998	23,053	24,949	27,001	5.5%
Sunshine Coast	19,555	20,191	22,299	24,174	24,698	6.9%
Unitywater	**38,582**	**43,189**	**45,352**	**49,123**	**51,700**	**6.2%**

*Note: 2011-12 shaded data reflects Unitywater's forecasts for 2011-12 from its 2011-12 Submission. This data is provided for comparison purposes only. * Estimated actual. Note: Residential water demand (ML/year) = litres per person per day x number of connected population x 365 / 1,000,000. Source: Unitywater (2011 & 2012).*

As noted above, SKM considered the growth rates imposed by the low series OESR population data to be more appropriate than the medium series adopted by Unitywater.

SKM's recommended connected population for the residential sector is shown in the table below.

Table 2.10: SKM's Recommended Residential Connected Population

	2011-12	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*CAGR 2011-16*
Moreton Bay	378,342	384,114	389,614	395,253	400,784	1.5%
Sunshine Coast	295,953	301,081	306,300	311,782	317,568	1.8%
Total Recommended	**674,294**	**685,195**	**695,913**	**707,036**	**718,352**	**1.6%**
Unitywater Proposed	**702,517**	**717,084**	**731,952**	**747,130**	**762,623**	**2.1%**
Difference	**-28,223**	**-31,889**	**-36,039**	**-40,094**	**-44,271**	**Na**

Source: SKM (2012).

In relation to average consumption, SKM stated that accurate forecasting is hampered by the lack of historical data on average consumption prior to the drought, the impact of the lifting of high-level restrictions and its replacement by PWCMs which remained in place at the time of setting prices for 2012-13[41]. SKM noted that since the drought ended the weather has been relatively wet, which may have masked any potential rebound from the lifting of restrictions. SKM noted that a clearer picture of rebound may be available after 2012-13 when conditions are expected to be drier.

SKM noted that Unitywater has also applied a cap of 200 l/p/d for both Moreton Bay and Sunshine Coast. SKM noted this is unlikely to be reasonable given the different starting positions of the two LGAs.

[41] The Authority notes that water restrictions in SEQ were lifted in January 2013, however this postdates the information available at the time of price setting and cannot therefore be used for price monitoring purposes.

In SKM's 2011-12 review, an assumption of 200 l/p/d was applied for the whole of South East Queensland. However, this did not mean that all LGA's average consumption was capped at 200 l/p/d individually. Councils with relatively high l/p/d usage are assumed to remain at relatively high usage levels. When SKM revisited its 2011-12 analysis and updated for the revised historical information in Unitywater 2012-13 submission, the target for the Sunshine Coast is 227 l/p/d (this is consistent with a 200 l/p/d usage over SEQ as a whole). Similarly, the target for Moreton Bay is 172 l/p/d, as average consumption in this council is off a much lower base.

In summary, SKM obtained its 2012-13 l/p/d estimate in each council area by:

(a) identifying the actual residential consumption (l/p/d) for each council area in SEQ in 2010-11;

(b) calculating the average residential consumption for SEQ as a whole in 2010-11 (162 l/p/d, using connected population to weight the l/p/d for each council);

(c) estimating the average consumption in each council area in 2015-16. Assuming that average consumption in SEQ rebounds to 200 l/p/d and once rebound has occurred, average consumption in each council area reflects the same relative pattern as in 2010-11. That is, councils with high l/p/d usage remain at relatively high l/p/d usage levels;

(d) calculating the growth in average consumption from 2011-12 to the year the rebound target is to be achieved; and

(e) applying the calculated growth rate to the estimated actual average consumption in 2011-12 to identify the l/p/d in 2012-13.

SKM's recommended average consumption is shown in Table 2.11.

Table 2.11: Recommended Residential Average Consumption (l/p/d)

	2011-12*	***2012-13***	***2013-14***	***2014-15***	***2015-16***	***CAGR 2011-15***
Moreton Bay	167	168	169	171	172	0.9%
Sunshine Coast	187	196	206	216	227	5.0%

*Note: * Estimated actual. Source: SKM (2012)*

Consistent with Unitywater's methodology, SKM applied these adjusted inputs to form its recommended residential water volume.

Table 2.12: Recommended Residential Water Demand (ML/year)

	2011-12 Review	*2012-13 Review*			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Moreton Bay	20,813	23,548	24,088	24,645	2.3%
Sunshine Coast	21,488	21,567	23,038	24,622	6.8%
Total Recommended	**42,301**	**45,115**	**47,126**	**49,267**	**4.5%**
Unitywater Proposed	38,582	45,352	49,123	51,700	7.2%
Difference	**3,719**	**-243**	**-2,009**	**-2,452**	**-2.7%**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. This data is provided for comparison purposes only. Source: SKM (2011 & 2012).

The Authority accepts SKM's residential water demand estimates for 2012-13.

Residential Wastewater Connections

As noted above, Unitywater's residential wastewater connections were based on January 2012 data extracted from its billing system, with growth at medium dwelling growth rates.

Table 2.13: Unitywater Residential Wastewater Connections

	2011-12 Submission	*2012-13 Submission*				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Moreton Bay	117,278	145,973	147,814	151,352	154,976	2.0%
Sunshine Coast	129,207	126,647	129,702	132,690	135,747	2.3%
Unitywater total	**246,485**	**272,620**	**277,516**	**284,042**	**290,723**	**2.2%**

*Note: 2011-12 shaded data reflects Unitywater's forecasts for 2011-12 from its 2011-12 Submission and is not comparable due to a change in methodology. * Estimated actual. Source: Unitywater (2011 & 2012) data template, SKM (2012).*

As noted above, connections in Unitywater's 2011-12 submission are not comparable to those in its 2012-13 submission due to a change in methodology.

SKM applied its preferred low growth rates to Unitywater's base year connections. SKM's recommended residential wastewater connections are shown in Table 2.14 below.

Table 2.14: Recommended Residential Wastewater Connections

	2011-12 Review	*2012-13 Review*			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*Growth in 2012-13*
Moreton Bay	116,755	148,777	151,497	154,293	1.9%
Sunshine Coast	128,561	129,014	131,425	133,957	1.9%
Total Recommended	**245,317**	**277,790**	**282,922**	**288,249**	**1.9%**
Unitywater Proposed	246,485	277,516	284,042	290,723	2.4%
Difference	**-1,168**	**-274**	**-1,120**	**-2,474**	**-0.5%**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12 and is not comparable due to a change in methodology. Source: Unitywater (2011 & 2012), SKM (2012).

The Authority accepts SKM's residential wastewater connections estimates for 2012-13.

Non-Residential Water Connections

Unitywater estimated non-residential water connections separately from residential connections in its 2012-13 submission. Non-residential water connections are estimated in the base year (2011-12) using data from the billing system.

Table 2.15: Unitywater Non-Residential Water Connections

	2011-12 Submission	*2012-13 Submission*				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Moreton Bay	12,589	4,009	4,105	4,204	4,305	2.4%
Sunshine Coast	11,836	9,062	9,272	9,485	9,704	2.3%
Unitywater total	**24,425**	**13,071**	**13,377**	**13,689**	**14,009**	**2.4%**

*Note: 2011-12 shaded data reflects Unitywater's forecasts for 2011-12 from its 2011-12 Submission and is not comparable due to a change in methodology. * Estimated actual. Source: Unitywater (2011 & 2012), SKM (2012).*

SKM applied its preferred low growth rates to Unitywater's base year connections.

Table 2.16: Recommended Non-Residential Water Connections

	2011-12 Review	*2012-13 Review*			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*Growth in 2012-13*
Moreton Bay	12,533	4,086	4,161	4,238	1.9%
Sunshine Coast	11,777	9,231	9,404	9,585	1.9%
Total Recommended	**24,310**	**13,317**	**13,565**	**13,823**	**1.9%**
Unitywater Proposed	24,425	**13,377**	**13,689**	**14,009**	**2.4%**
Difference	**-115**	**-60**	**-124**	**-186**	**-0.5%**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12 and is not comparable due to a change in methodology. Source: Unitywater (2011 & 2012), SKM (2011 & 2012).

Non-Residential Water Volumes

As noted above, Unitywater based its estimate of non-residential water volumes on the concept of EPs, being the typical demand for any particular land use type expressed in terms of the demand from a residential person in an attached dwelling. The number of connected EPs forecast by Unitywater is shown in Table 2.17.

Unitywater applied its estimate of non-residential EPs to its estimate of non-residential water use to forecast non-residential water volumes.

Table 2.17: Unitywater Non-Residential EP

	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*CAGR 2011-15*
Moreton Bay	80,006	81,603	83,232	84,893	86,587	2.0%
Sunshine Coast	90,551	92,514	94,519	96,568	98,661	2.2%
Unitywater	**170,557**	**174,117**	**177,751**	**181,461**	**185,248**	**2.1%**

*Note: * Estimated actual. Source: Unitywater (2012)*

Table 2.18: Unitywater Non-Residential Water Use (l/EP/d)

	*2011-12**	*2012-13*	*2013-14*	*2014-15*
Moreton Bay	102	103	103	103
Sunshine Coast	135	135	136	136

*Note: * Estimated actual. Source: Unitywater (2012)*

Table 2.19: Unitywater Non-Residential Water Demand (ML)

	2011-12 Submission	*2012-13 Submission*				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Moreton Bay	2,973	2,992	3,061	3,130	3,202	2.3%
Sunshine Coast	4,445	4,394	4,566	4,676	4,788	2.9%
Commercially negotiated	n/a	1,199	1,199	1,199	1,199	0.0%
Unitywater	**7,418**	**8,586**	**8,826**	**9,005**	**9,189**	**2.3%**

*Note: 2011-11 shaded data reflects Unitywater's forecasts for 2011-12 from its 2011-12 Submission. * Estimated actual. Source: Unitywater (2011 & 2012), SKM (2011 & 2012).*

As noted above, SKM did not support the use of EP for the non-residential sector for short term forecast, as the demand per EP is not equal to an equivalent demand from a person in the residential sector. Further, average demand in the residential sector is growing (rebounding from restriction levels) while that in the non-residential sector is not. Therefore, SKM did not recommend basing the short term water demand forecast on the EP, and preferred the use of connections.

Therefore, SKM recommended using the average consumption per connection. SKM noted that Unitywater made the assumption that average non-residential consumption is unlikely to rebound significantly from restriction levels and has assumed a nominal rate of increase of 0.28% per annum for Moreton Bay and 0.23% per annum for the Sunshine Coast over the forecast period. However, Unitywater did not provide an explanation for adopting these values.

Given that businesses do not usually have significant discretionary and outdoor water use and that demand management measures implemented during the drought are mainly structural rather than behavioural, SKM agreed with Unitywater's assumption[42]. In addition, SKM was of the view that the drive to restrain non-residential water use continues through the WEMP, which remained in place at the time of setting prices for 2012-13.

Given the lack of historical non-residential customer numbers and average usage, SKM has adopted Unitywater's average usage growth rate. The resulting non-residential average consumption is shown in Table 2.20.

Table 2.20: SKM Recommended Average Non-residential Water Use (l/c/d)

	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Moreton Bay	2,045	2,051	2,056	2,062	0.28%
Sunshine Coast	1,328	1,332	1,335	1,338	0.23%

*Note: * Estimated actual. Source: SKM (2012)*

[42] Residential users have significant discretionary outdoor water use which is forecast to increase (rebound) following the lifting of water restrictions, as noted above.

SKM noted that Unitywater has also provided for 1.2GL of commercially negotiated demand, based on water demand from a major user. SKM included this estimate in its recommended non-residential water volumes, shown in Table 2.21.

Table 2.21: Recommended Non-residential Water Demand (ML)

	2011-12 Review	*2012-13 Review*			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Moreton Bay	3,025	3,058	3,123	3,189	2.1%
Sunshine Coast	4,510	4,487	4,581	4,680	2.1%
Commercially Negotiated	n/a	1,199	1,199	1,199	0.0%
Total Recommended	**7,535**	**8,744**	**8,903**	**9,068**	**1.8%**
Unitywater Proposed	7,418	8,826	9,005	9,189	2.3%
Difference	**117**	**-82**	**-102**	**-121**	**-0.5%**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. np denotes not provided. Source: SKM (2012).

The Authority accepts SKM's non-residential water demand estimates.

Non-Residential Wastewater Connections

As discussed previously, Unitywater's non-residential wastewater connections were based on data from its billing system.

Table 2.22: Unitywater Non-residential Wastewater Connections

	2011-12 Submission	*2012-13 Submission*				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Moreton Bay	35,392	7,305	7,480	7,660	7,843	1.8%
Sunshine Coast	11,615	9,960	10,192	10,428	10,670	1.7%
Unitywater total	**47,007**	**17,265**	**17,672**	**18,088**	**18,513**	**1.8%**

*Note: 2011-12 shaded data reflects Unitywater's forecasts for 2011-12 as published in the SEQ Price Monitoring Report for 2011-12 and are not comparable due to the change in methodology. * Estimated actual. Source: Unitywater (2011 & 2012) data template, SKM (2012).*

SKM applied the dwelling growth rates that conform to the OESR low population series to the 2011-12 non-residential wastewater connections to obtain estimates of non-residential wastewater connections as shown in Table 2.23 below.

Table 2.23: Recommended Non-Residential Wastewater Connections

	2011-12 Review	*2012-13 Review*			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*Growth in 2012-13*
Moreton Bay	35,235	7,445	7,581	7,721	1.9%
Sunshine Coast	11,557	10,146	10,336	10,535	1.9%
Total Recommended	**46,792**	**17,591**	**17,917**	**18,256**	**1.9%**
Unitywater Proposed	47,007	17,672	18,088	18,513	1.8%
Difference	**-215**	**-81**	**-171**	**-257**	**0.1%**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12 and are not comparable due to the change in methodology. Source: SKM (2011 & 2012).

The Authority accepts SKM's non-residential wastewater connection estimates.

Non-Residential Wastewater Volumes

Unitywater only forecast non-residential wastewater volumes for Maroochy as this is the only council area that charges on this basis. For these customers, wastewater volume is calculated as a percent of metered water consumption based on a set of discharge factors ranging from 5% to 90%.

SKM noted that this approach is consistent with those adopted in other jurisdictions where rather than actually metering wastewater volumes, assumptions are made on the proportion of customers' metered drinking water consumption flowing into the sewer. SKM noted that this approach avoids the extensive expenditure that would be required to meter consumption of wastewater services which is forecast to grow at the same rate as water consumption.

In the absence of more historical information, SKM accepted that the methodology applied to estimate wastewater volumes for Maroochy is appropriate. However, SKM advised that the discharge factors be updated to take into account the changing nature of industries as well as changes to drinking water consumption patterns due to the drought and restrictions. SKM also advised that the growth rate of the deemed wastewater volume be compared with the general water volume growth rate in the Sunshine Coast so that future forecasts may have a better basis for projection.

Accepting the methodology applied by Unitywater, SKM made an adjustment to reflect its changes to Sunshine Coast water volumes, shown in Table 2.24.

Table 2.24: Recommended Maroochy Non-Residential Wastewater Demand (ML)

	2011-12 Review	*2012-13 Review*			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
SKM	1,872	1,708	1,740	1,773	2.6%
Unitywater	1,838	1,738	1,776	1,814	3.4%
Difference	**34**	**-30**	**-36**	**-41**	**-0.8%**

Note: 2011-12 shaded data reflects forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. Source: SKM (2011 & 2012).

The Authority accepts SKM's non-residential wastewater demand estimates.

Non-Revenue Water

Non-revenue water is the difference between bulk water supplied by the SEQ WGM and billable consumption from residential and non-residential customers. Non-revenue water includes network leakage, water theft and authorised unbilled water consumption (e.g. fire fighting and pipe flushing).

Table 2.25: Unitywater Non-Revenue Water (ML)

	2011-12 Submission	*2012-13 Submission*				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Moreton Bay[a]	2,664	2,877	2,959	3,047	3,139	2.9%
Sunshine Coast	3,202	3,255	3,312	3,376	3,275	0.2%
Unitywater	**5,866**	**6,132**	**6,271**	**6,423**	**6,559**	**1.5%**

*Note: [a] includes non-revenue water for commercially negotiated customer. 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. * Estimated actual. Source: Unitywater (2011 & 2012).*

SKM noted that Unitywater has estimated losses of 22 l/p/d in 2011-12. This is expected to fall to 18 l/p/d by 2021 due to various projects aimed at reducing losses.

Notwithstanding the fall on a l/p/d basis, growth in population increases the level of non-revenue water. Unitywater's estimate of non-revenue water increases from 6.1 GL in 2011-12 to 6.6 GL in 2014-15. In 2011-12, this amounts to some 10.1% of total water purchased in Moreton Bay and 11.5% in the Sunshine Coast. Supporting information and historical data showed that in Moreton Bay losses range from 7.3% to 12.1% on a quarterly basis, with a loss factor of 10% over the period. If the period of the floods in early 2011 is excluded, the average loss factor is 10.3%. For the Sunshine Coast, historical data on losses averaged 12.2%. If the flood period is excluded, losses are 11.4%.

Given these historical values, SKM accepted that the loss factors of 10.1% and 11.5% adopted by Unitywater for Moreton Bay and Sunshine Coast are reasonable. Going forward, Unitywater has embarked on an UWP which aims to quantify and classify the non-revenue water component of its water balance.

This project will benchmark Unitywater's non-revenue water against that of other water businesses and to identify opportunities to reduce losses. Unitywater expects that this and other projects will lead to loss reduction of 3.8% per annum for Moreton Bay and 4.6% per annum for the Sunshine Coast such that by 2021, the loss factors of 7.4% and 7.6% would apply for Moreton Bay and the Sunshine Coast respectively.

Given these measures, SKM accepted the loss factors applied by Unitywater and adjusted the estimates of non-revenue water to be consistent with the water volume recommended by SKM.

Table 2.26: Recommended Non-Revenue Water (ML)

	2011-12 Review	*2012-13 Review*				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Moreton Bay	2,887	2,751	2,882	2,832	2,782	0.4%
Sunshine Coast	3,364	3,255	3,212	3,232	3,255	0.0%
Commercially negotiated	n/a	24	24	24	24	0.0%
Total Recommended	**6,251**	**6,030**	**6,119**	**6,088**	**6,062**	**0.2%**
Unitywater Proposed	5,866	6,132	6,271	6,423	6,559	1.5%
Difference	**385**	**-102**	**-152**	**-335**	**-497**	**-1.3%**

Source: SKM (2012), QCA calculations.

The Authority accepts SKM's non-revenue water estimates.

Bulk Water

Unitywater's forecasts of bulk water are the total of residential, non-residential and non-revenue water (see below).

Table 2.27: Unitywater Bulk Water Volumes (ML)

	2011-12 Submission	*2012-13 Submission*				
	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Moreton Bay[a]	24,665	28,390	30,270	32,325	34,541	6.8%
Sunshine Coast	27,105	28,305	30,178	32,256	32,762	5.0%
Unitywater	**51,770**	**56,695**	**60,448**	**64,551**	**67,303**	**5.9%**

*Note: [a] includes non-revenue water from the commercially negotiated customer. 2011-12 shaded data reflects Unitywater's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. * Estimated actual. Source: Unitywater (2011 & 2012) data template, SKM (2012).*

SKM revised Unitywater's estimates of bulk water (see Table 2.28 below) based on its view of residential, non-residential and non-revenue water (as noted previously). SKM recommended lower bulk water estimates than Unitywater, predominantly due to SKM's use of the OESR low series for population and connections growth.

Table 2.28: Recommended Bulk Water Volumes (ML)

	2011-12 Review	*2012-13 Review*			
	2011-12	*2012-13*	*2013-14*	*2014-15*	*CAGR 2011-15*
Moreton Bay	26,725	30,712	31,266	31,840	2.0%
Sunshine Coast	29,362	29,266	30,851	32,558	5.4%
Total Recommended	**56,087**	**59,978**	**62,117**	**64,397**	**3.7%**
Unitywater Proposed	51,770	60,448	64,551	67,303	5.9%
Difference	**4,317**	**-470**	**-2,434**	**-2,906**	**-2.2%**

Note: 2011-12 shaded data reflects the Authority's forecasts for 2011-12 as published in its SEQ Price Monitoring Report for 2011-12. Source: Unitywater (2011 & 2012) data template, SKM (2011 & 2012).

The Authority notes that the WGM released its Operating Strategy in May 2012, which contained estimates of Unitywater's bulk water demand for 2012-13. These demand estimates were required to be used by the Authority in its review of SEQ Grid Service Charges for 2012-13.

As a cross check on SKM's estimates, the Authority has contrasted the available estimates of Unitywater's demand for bulk water in 2011-12 in the table below. Unitywater's recent estimate is 16.8% higher than it previously forecast, and 4.8% higher than the WGM's May 2012 estimate. The SKM estimate is 3.95% higher than the WGM's.

The Authority accepts SKM's bulk water estimate, as it is based on the information available at the timing of price setting and therefore forms the most relevant estimate for the purposes of price monitoring.

Table 2.29: Comparison of Bulk Water Volumes (ML) 2012-13

	Unitywater 2011-12 Information Return	*Unitywater 2012-13 Information Return*	*WGM*	*SKM*
Moreton Bay*	24,665	30,270	28,510	30,712
Sunshine Coast	27,105	30,178	29,187	29,266
Unitywater Total	**51,770**	**60,448**	**57,697**	**59,978**

*Note: * includes bulk water demand from commercially negotiated customer. Source: Unitywater (2011-12) data template, Unitywater (2012-13) data template, WGM (2012).*

The Authority accepts SKM's bulk water estimates.

Demand for Capital Planning

As part of this year's review, the Authority notes that Unitywater provided further information on its long-term demand estimates. In summary, this procedure involves the aggregation of estimates produced for each council area, resulting from:

(a) the use of base population data sourced from each council, which is drawn from each council's planning schemes, divided into different densities and overlaid by GIS mapping of Unitywater's service area;

(b) comparison with State Government population projections to confirm that the population forecast is suitable for the purpose of providing 20-year demand projections;

(c) the application of per capita consumption for planning purposes by dwelling density type which takes account of system leakage; and

(d) the application of an allowance to account for uncertainty regarding population projections and long-term per capita consumption.

In relation to Unitywater's demand forecasts for capital planning, SKM noted that:

(a) for water, Unitywater's capital planning standard employs 230 l/p/d for both non-residential and low and medium density residential, and 200 l/p/d for high density residential;

(b) for wastewater, Unitywater's demand factor is derived from the planning assumptions for Moreton Bay Regional Council (MBRC) and Sunshine Coast Regional Council (SCRC) under the current versions of the relevant Planning Schemes. The planning assumptions address the various components for each form of development initiatives. These planning assumptions are required for consistent planning of future infrastructure to service the priority infrastructure area with a Desired Standards of Service (DSS).

Authority's Analysis

In its Final Report for 2011-12, the Authority reviewed the need for consistency between demand forecasts for planning and for pricing purposes. In its Final Report for 2011-12, the Authority noted the inconsistency between Unitywater's short-term demand trend and its long-term forecast of average water demand of 276 l/p/d in Moreton Bay and 230 l/p/d in the Sunshine Coast.

SKM noted that scaling capital expenditure to reflect short-term demand may be risky, as short-term demand patterns can change more quickly than the ability to augment. Further, variances in short-term demand can be accommodated in the review of the timing of works.

The Authority considers that this approach remains relevant in 2012-13. The Authority further notes that the entities are currently considering the long-term capital planning parameters in the SEQ Water Supply and Sewerage Design and Construction Code. The Code is due to be finalised by mid-2013. The current draft has average water demand of 230 l/p/d for Unitywater which is broadly consistent with the Authority's estimate of average water consumption in the Unitywater area following rebound in average consumption rates.

SKM reviewed Unitywater's demand estimates and parameters. SKM stated that the standard approach used by water utilities around Australia to estimate the infrastructure required to serve future communities is the application of demand factors on average consumption. Different parts of the water supply and wastewater system are designed by applying a series of peaking factors to the average consumptions. This approach is supported in the Water Supply and Sewerage Codes of Australia published by the WSAA.

SKM stated that key design parameters utilised in the SEQ are: mean day maximum month (MDMM); peak day (PD); and peak hour (PH). These factors were discussed in further detail in the Authority's 2011-12 Final Report.

SKM stated that Unitywater uses different peaking factors for the following types of customers: single family residential; multiple family residential; rural residential; and, commercial and industrial.

SKM considered the average demand and peaking factors applied for residential customers are reasonable. However, SKM noted that many water utilities across Australia have different peaking factors for different types of non-residential development. This allows improved design of infrastructure, particularly in areas where urban renewal may result in a significant mix of commercial and high density properties that are atypical of new suburb development areas.

In the non-residential sector, SKM suggested that Unitywater include separate classification of a tourist category which would take account of the peaking characteristics of hotel, motel and tourist park accommodation, which would otherwise be classified as commercial. These types of customers would have peaking factors more closely aligned with residential multi-unit dwellings. SKM considered these modifications may produce more efficient capital expenditure estimates in areas with a significant proportion of tourist accommodation.

Summary

As noted in the Authority's first price monitoring report, demand estimates are an essential component of price setting. The more reliable the demand estimates, the more informed will be the choices businesses can make about expenditure and prices. It is therefore important

that demand forecasts represent the best possible assessment of future consumption given the available information.

The Authority acknowledges that structural change in the SEQ water sector has led to a number of legacy issues, particularly regarding the transfer and robustness of historical data from the councils.

Given available information, the Authority's consultants considered the methodology adopted to forecast demand is generally reasonable at this stage for 2012-13, although Unitywater should forecast non-residential water use based on connections (rather than EP).

The Authority has also adjusted Unitywater's residential and non-residential demand for water and wastewater to reflect OESR forecast growth rates using the low population series (rather than medium), the OESR method of interpolation for dwellings growth rates, and average residential use based on achieving 200 l/p/d over SEQ as a whole (rather than in each council area).

In relation to long term demand, the Authority notes that Unitywater's average residential consumption level appears to be broadly consistent with the Authority's estimate of average water consumption in the Unitywater area following rebound in average consumption rates. SKM suggested Unitywater consider a separate tourist category which would take account of the peaking characteristics of hotel, motel and tourist park accommodation, which would otherwise be classified as commercial.

Going forward, explicit inclusion of price elasticity for water should be incorporated in demand forecasting once the estimated level of rebound is achieved. It would seem appropriate to develop and compare different approaches to demand forecasting for future use in SEQ.

2.6 The Initial Regulatory Asset Base

In March 2010, the Minister for Natural Resources, Mines and Energy and the Minister for Trade advised the Authority of the initial RAB as at 1 July 2008 for interim price monitoring. The Minister advised the RABs for each entity as well as the RABs for each participating council, and other adjustments. The Minister's advised RAB for Unitywater was $2,029.87 million.

Unitywater's Submission

Unitywater noted that it had allocated the advised RAB of $2,029.9 million to each asset on the basis of their audited values, as in last year's submission.

Table 2.30: Unitywater RAB as at 1 July 2008 ($m)*

	Previously Allocated Water	*Previously Allocated Wastewater*	*Previously Allocated RAB*	*Water*	*Wastewater*	*RAB*
Moreton Bay	509.75	599.86	1,109.61	509.75	599.86	1,109.61
Sunshine Coast	369.06	550.64	919.69	369.06	550.64	919.69
Unitywater	**878.81**	**1,150.50**	**2,029.31**	**878.81**	**1,150.50**	**2,029.31**

*Note: * excludes non-regulated assets of $0.6m. Shaded data reflects the Authority's previously accepted RAB as published in its SEQ Price Monitoring Report for 2011-12. This data is provided for comparison purposes only. Source: Unitywater (2012).*

Other Submissions

Mr Koerner and Ms West noted that the Authority is not authorised to independently review the initial RAB value under the Direction. They submitted that the Authority is unable to identify monopoly pricing abuse or provide transparent information to customers about the costs and other factors underlying annual increases in prices.

Authority's Analysis

The Authority has reviewed the allocation of the initial RAB by Unitywater and confirmed that it is the same as that previously accepted by the Authority in its 2011-12 review. The allocation of the RAB value properly reflects the value of assets transferred to Unitywater from its participant councils.

In response to Mr Koerner and Ms West, the Direction requires that the Authority accept the RAB valuation as at 1 July 2008 as advised by the Minister for Natural Resources, Mines and Energy and Minister for Trade.

The Authority accepts Unitywater's apportionment of the Minister's advised RAB.

2.7 Capital Expenditure

2.7.1 Capital Expenditure from 1 July 2008 to 30 June 2010

The Ministerial Direction requires the Authority to accept as prudent and efficient:

(a) actual capital expenditure for water and waste water (excluding establishment costs) as included in councils' financial accounts from 1 July 2008 to 30 June 2010;

(b) allowable establishment costs as advised by the Minister for Natural Resources, Mines and Energy and Minister for Trade; and

(c) contributed, donated and gifted assets and capital expenditure funded through cash contributions from 1 July 2008 to 30 June 2010.

Unitywater's Submission

In its submission, Unitywater included capital expenditure for 2008-09 of $129.6 million and $290.2 million in 2009-10 (inclusive of contributed, donated and gifted assets). Unitywater did not include establishment costs in its 2012-13 information template (establishment costs were included in previous years' templates).

Authority's Analysis

The Authority notes that Unitywater's capital expenditure values for 2008-09 and 2009-10 are the same as those approved by the Authority in its 2011-12 Final Report, except that establishment costs of $13.13 million as at 30 June 2010 were inadvertently omitted in Unitywater's 2012-13 information template. The Authority has included establishment costs consistent with that approved in its 2011-12 Final Report (see table below).

Table 2.31: Capital Expenditure 2008-09 and 2009-10 ($m)*

	2008-09	*2009-10*	*2008-09*	*2009-10*
Moreton Bay	80.9	187.3	80.9	187.3
Sunshine Coast	48.7	102.9	48.7	102.9
Establishment costs	0.0	13.1	0.0	13.1
Unitywater	**129.6**	**303.3**	**129.6**	**303.3**

*Note: Shaded data reflects the Authority's previously accepted capital expenditure in its SEQ Price Monitoring Report for 2011-12. This data is provided for comparison purposes only. *Note: includes contributed, donated and gifted assets. Source: Unitywater (2012).*

The Authority has accepted Unitywater's capital expenditure in 2008-09 and 2009-10 and the establishment costs approved by the Minister.

2.7.2 Capital Expenditure from 1 July 2010

The Ministerial Direction requires the Authority to review the prudency and efficiency of capital expenditure for inclusion in the RAB from 1 July 2010. Only expenditure found to be both prudent and efficient can be included in the RAB.

The criteria and processes for determining the prudency and efficiency of capital expenditure are defined in the Information Requirements for 2012-13.

In summary, to establish prudency, an entity must demonstrate that there is a need for the expenditure, typically by reference to an analysis of its driver/s. To establish efficiency, information is required on the scope and standard of the works and the corresponding cost and timing of works. This should be linked, where relevant, to the underlying cost components such as unit rates, on-costs and contingencies and supporting materials such as consultant reports. Information is also required on expenditure approval policies and procedures.

The Authority requires capital expenditure from 1 July 2010 to be included in the RAB only when it is commissioned, and contributes productivity capacity to the system.

Unitywater's Submission

Unitywater proposed capital expenditure of $1,143 million over five years (including contributed assets), of which water accounts for $295 million and wastewater $848 million. Unitywater provided its capital expenditure on a commissioned basis, consistent with its approach in its 2011-12 submission.

For 2012-13, capital expenditure of $351.38 million reflects an increase of $117.05 million or 50% on 2011-12 capital expenditure of $234.33 million. The noticeable increase in the value of commissioned projects in 2012-13 results from a number of large wastewater projects in Moreton Bay.

Proposed Capital Expenditure

Unitywater assigned its capital works expenditure to the following cost drivers: growth, renewal, improvement, compliance and contributed assets (see tables below).

Unitywater noted across both regions, wastewater services account for a larger proportion of capital expenditure than water services, due to:

(a) major upgrades of some STPs that are scheduled to occur over the next few years;

(b) in general, STP upgrades require a reissue of licence conditions that apply to the entire load, not just the incremental new load. As such, reconfiguration of STP design and functionality to meet current licence conditions for all loads is a considerable driver of capital expenditure; and

(c) deferral of investment in water distribution infrastructure due to falling levels of both residential and non-residential business water consumption over the previous five years, with much of this attributable to water restrictions and government initiatives regarding demand.

Table 2.32: Unitywater Forecast Capital Expenditure Water and Wastewater ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
Growth	99.48	138.82	237.14	120.77	51.34	647.56
Renewal	13.58	39.37	35.14	29.22	25.16	142.48
Improvement	9.38	18.92	31.06	60.44	7.55	127.35
Compliance	3.54	5.65	10.45	1.53	0.56	21.72
Contributed Assets	55.13	31.56	37.59	39.02	40.31	203.61
Total	**181.11**	**234.33**	**351.38**	**250.98**	**124.91**	**1142.72**
Comprising						
Water	**66.45**	**64.66**	**68.49**	**50.40**	**44.58**	**294.59**
Wastewater	**114.66**	**169.66**	**282.89**	**200.58**	**80.33**	**848.13**

Note: Capital expenditure is presented here on an 'as commissioned' basis as per Unitywater's submission. Source: Unitywater (2012) data template.

The water and wastewater costs related to each of Unitywater's two geographic areas are detailed in the tables below.

Table 2.33: Unitywater Capex for Water by Geographic Area ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
Moreton Bay	40.61	33.97	26.47	16.26	22.29	139.60
Sunshine Coast	25.84	30.70	42.01	34.15	22.29	154.99
Total	**66.45**	**64.66**	**68.49**	**50.40**	**44.58**	**294.59**

Note: includes contributed assets. Source: Unitywater (2012) data template.

Table 2.34: Unitywater Capex for Wastewater by Geographic Area ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total*
Moreton Bay	87.54	122.25	201.85	42.26	40.16	494.05
Sunshine Coast	27.12	47.41	81.05	158.32	40.17	354.07
Total	**114.66**	**169.66**	**282.89**	**200.58**	**80.33**	**848.13**

Note: includes contributed assets. Source: Unitywater (2012) data template.

Changes to Capital Expenditure Estimates

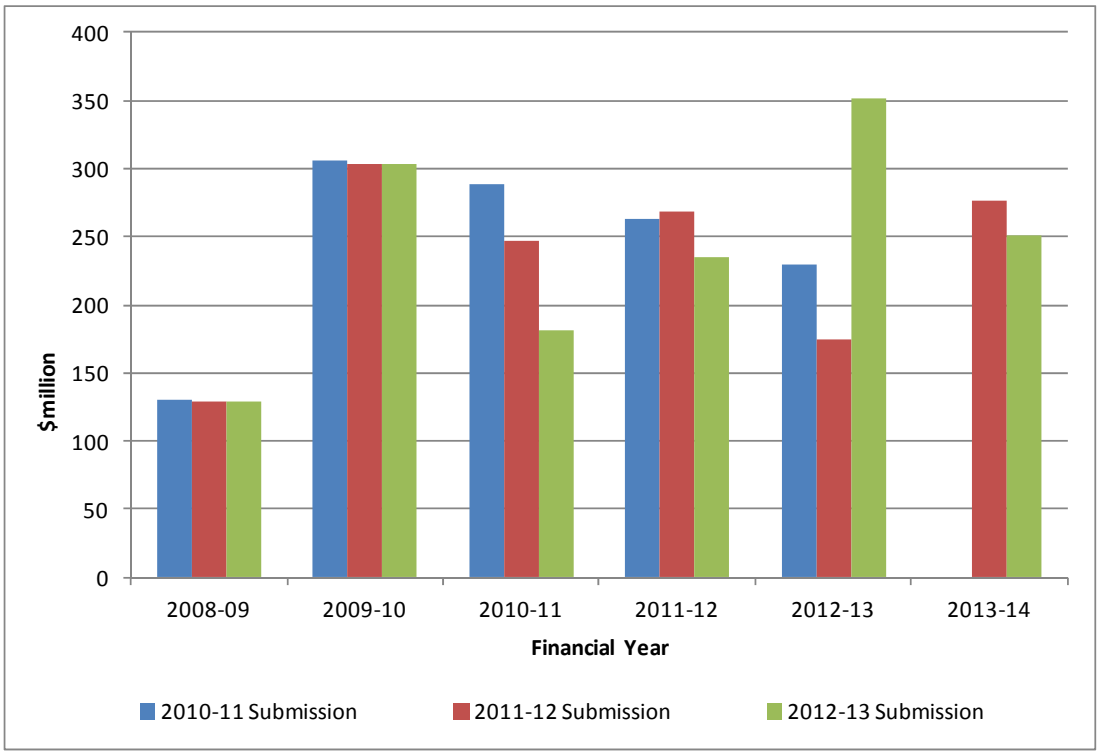
Unitywater sought to identify and explain the variation between its forward program and that previously proposed in its 2011-12 submission (see Table 2.35 and Chart 2.5 below).

Table 2.35: Unitywater Capital Expenditure 2011-12 and 2012-13 Submission*($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
2010-11 Submission (a)	287.88	262.80	229.97	na	**na**
2011-12 Submission (b)	246.63	268.73	174.74	275.90	**966.00**
2012-13 Submission (c)	181.11	234.33	351.38	250.98	**1,017.80**
Variance (c) – (b)	**-65.52**	**-34.40**	**176.64**	**-24.92**	**51.80**

*Note: *includes contributed assets.*

Chart 2.5: Unitywater Capital Expenditure 2010-11, 2011-12 and 2012-13 Submissions ($m)



Note: Includes establishment costs. Source: Unitywater (2011).

Unitywater noted that the capital expenditure forecasts provided in the 2011-12 submission vary from the forecast data provided in the current submission. Unitywater attributed this discrepancy to various factors including that Unitywater:

(a) is completing its own capital forecasts as opposed to relying on council estimations of future capital requirements;

(b) is forming its own view on assets condition and performance;

(c) has the benefit of operational information to obtain a greater understanding of its area and the business's capital needs, resulting in a more accurate prediction of future expenditure and network requirements;

(d) is achieving various efficiencies and sourcing alternatives to expenditure than had been previously forecast by the individual councils; and

(e) is applying rigorous justification process to justify the needs and the scope of major projects through its capital works committee (see further below).

Service Standards

Unitywater submitted that it plans capital expenditure requirements to meet expected demand and customer service standards and obligations to provide safe, secure and reliable drinking water supply, trade waste and sewage collection, transport and treatment services.

Capital Planning

In its submission, Unitywater noted that the capital expenditure planning process includes rigorous assessment by a Capital Works Committee. The Capital Works Committee meets monthly and was established to monitor and review capital expenditure planning, program delivery, and ensure alignment with strategic objectives and management of network risk.

Unitywater has established a multi-divisional Asset Steering Committee to review and endorse capital and operating projects and programs for submission to the Capital Works Committee. The Asset Steering Committee was responsible for development of Unitywater's Capital Works Justification Process, to satisfy the linkage between capital and operating expenditure programs and Unitywater's strategic objectives, and to meet the justification requirements of the Authority.

The Capital Works Master Justification Process documents the process, decision points, options assessment, prioritisation and sequencing and delivery of capital projects and programs. The process covers the identification, development, prioritisation and approval phase of capital work projects and programs.

Unitywater noted that the Asset Steering Committee has progressed the Netserv Plan Part A and B that seeks to capture in a coordinated way Unitywater's activities, strategies and plans.

The process undertaken by Unitywater in planning its growth, renewals and compliance related capital expenditure are illustrated in Figure 2.2.

Unitywater used a prioritisation model to assess projects across the region. This risk-based model allows each project to be assessed, scored and ranked.

Projects are evaluated and scored against six weighted criteria which align with Unitywater's corporate risk assessment methodology, including:

(a) safety;

(b) environmental;

(c) financial;

(d) service delivery;

(e) legal and regulatory; and

(f) image and reputation.

Four of these criteria utilise a risk calculation approach (likelihood multiplied by consequences) to add additional rigour to the scoring process. Each criteria is assigned a weighting and the combined aggregate scores are then used to rank the projects within the draft program.

Projects that meet the following specific triggers are automatically included in the capital expenditure program. These triggers include:

(a) specific statutory or legislative requirements;

(b) extreme public, workplace health and safety (WH&S) or environmental risks;

(c) certain risks identified on the company risk register; and

(d) previously commenced projects that must continue.

Figure 2.2: Unitywater Capital Planning Process

Source: Unitywater (2012).

Alternatives to Traditional Capital Expenditure

Unitywater submitted that coordinated and open discussion amongst a range of stakeholders including economic and environmental regulators, instrumentalities and departments is necessary to achieve alignment of policy objectives of healthy waterways and easing cost of living pressure on customers.

Unitywater stated that it welcomes the opportunity to participate in such a discussion, and to assist the Authority to prepare a discussion paper on developing a specialised water sector regulatory test (Wet Test) focusing on the Total Water Cycle Management Plans (TWCMP) that may consider:

(a) demand side management;

(b) operating expenditure solutions;

(c) network augmentation options with multivariate and multidisciplinary prioritisation and option assessment; and

(d) nutrient offsets such as alternative investment to reduce pollutants, sediment or nutrients within a catchment that are more affordable than traditional STP augmentation to meet increasingly stringent environmental licences.

Unitywater stated that the first three points are already being considered as part of Unitywater's existing capital expenditure option assessment process. However, Unitywater noted that no tool currently exists to support non-network investment on private or public lands to achieve better water system outcomes. Unitywater intends to encourage this investment through the TWCMP.

Unitywater suggested that stakeholders and regulators facilitate a workshop to discuss developing a regulatory test for non-network investments that may also support initiatives such as nutrient offsets or trading or investment in natural assets. Unitywater stated that it would be pleased to work with the Authority on developing economically efficient opportunities that may exist but have not been encouraged within the current legislative, regulatory and environmental control frameworks.

Authority's Analysis

Adequacy of Capital Expenditure Data

Halcrow considered that Unitywater provided sufficient supporting information to enable assessment of the prudence and efficiency of the selected sample of capital projects.

Halcrow stated that it was clear that Unitywater is undertaking its capital planning and delivery activities in accordance with documented processes.

However, in some cases Halcrow had difficulty in understanding how itemised costs associated with capital expenditure translated into as constructed costs. Therefore Halcrow recommended that future assessments be streamlined by ensuring that all major expenditure line items are consistently included in planning documentation, approvals documentation and project reports. This would also ensure that the capital approvals process remains transparent and any variation from planned expenditure can be appropriately tracked.

Unitywater has indexed capital costs by applying the Producer Price Index (PPI) Road and Bridge series for Queensland. For 2012-13 the PPI was 4.6%.

As noted in the Authority's price monitoring report for 2010-11, there are a range of options for the indexing of asset values. Industry input indices should provide a more accurate estimate but may be subject to step changes over short periods, and would be expected to rise and fall with market conditions.

In the Authority's Seqwater Irrigation Draft Report (QCA 2012), the Authority compared the proposed index of 4% for direct materials and contractor's costs for the regulatory period (2013-17) against a range of construction cost escalation factor estimates from 4.1% to 5.1% calculated using historical data over a 10-year period.

Based on the above, the Authority considered that Unitywater's proposed indexation rate of 4.6% per annum is reasonable. Any variations subsequently found between forecast and actual can be taken into account in future reviews.

Service Standards

The Authority did not review service standards as part of this price monitoring review. The Authority accepted the service standards provided by the entities so long as they had been approved by other relevant agencies.

Where service standards are the driver for capital expenditure, SKM reviewed this against the standards provided by Unitywater to assess the prudency and efficiency of the works.

The Authority supported the development of specific and measurable service standards and notes that this is a first step in the development of a more integrated performance monitoring framework (QCA, 2010).

Capital Planning

The Authority in its Final Report for 2010-11 noted that it supported initiatives within the entities to develop their internal processes to the planning and implementation of capital expenditure to allow for:

(a) the consideration of prudency and efficiency of capital expenditure from a regional (whole of entity) perspective;

(b) only commissioned capital expenditure to be included in the RAB and therefore prices;

(c) a standardised approach to cost estimating, including a standardised approach to estimates for items such as contingency, preliminary and general items, design fees and contractor margins, so that there is uniformity of cost estimating across all proposed major projects;

(d) a summary document to be prepared for identified major projects so as to facilitate standardised reporting;

(e) an implementation strategy to be developed for each major project that includes recommendation on delivery methodology, program and a risk review process; and

(f) a 'toll gate' or 'gateway' review process to be implemented so that appropriate reviews are undertaken at milestone stages for selected projects.

Halcrow considered that Unitywater's capital planning and justification framework represented a robust planning process.

In 2011-12, the SEQ entities were part of the WSAA asset management benchmarking, the purpose being to benchmark asset management performance and identify performance improvement opportunities for participating utilities in the water industry. Halcrow noted that Unitywater was found to have demonstrated relatively strong asset management practices in a number of areas with asset financial management, quality management, equipment/product/design standards and procurement being assessed as well developed.

A number of improvement opportunities were identified which Unitywater is moving to address. Halcrow noted that Unitywater identified implementation of these improvements to realise significant future cost savings. For example, as noted by Halcrow, Unitywater expects savings of approximately $2.5 million over four years as a result of the full implementation of its Combined Asset Management System.

The Authority also considers that Unitywater asset management should develop a relationship between asset performance, cost, level of service and price. There is a need to develop a clear position and understanding about asset operation and cost, the level of service provided and/or demand and the price customers pay. The objective is to develop the value concept established to date by Unitywater to enable the organisation to defend its position on investment to stakeholders.

The Authority notes that while Halcrow considered savings to be achievable it was unable to estimate the quantum of the total savings arising from better asset management practices. Unitywater should estimate and report on the cost savings arising from improvements to asset management, as part of future reviews.

In relation to Unitywater's proposal for a specialist regulatory test for non-network investments, the Authority notes that in its Final Report for 2011-12 it supported efforts to seek collaborative and cost-effective solutions for maximising water quality improvements and achieving healthy waterways, and noted that there is a specific agency responsible for effluent quality standards.

The Authority notes that the Authority's current focus on prudency and efficiency allows for consideration of non-traditional responses that achieve desired results across geographic boundaries and are allowable under current environmental requirements. However, a key challenge will be to demonstrate to the Department of Environment and Heritage Protection (DEHP) (as technical and environmental regulator) that alternative ways of achieving environmental outcomes are available and appropriate. This remains the Authority's view.

The Authority continues to support initiatives for collaborate and cost-effective solutions that achieve environmental outcomes.

Prudency and Efficiency

For capital expenditure to be included in the RAB it is required to be prudent (there is a demonstrated need for the expenditure) and efficient (it is cost-effective in its scope and standard, using market benchmarks).

As previously noted, in assessing the prudency of the sampled projects, the Authority's consultants have assessed each project individually against planning documents. The nature of the cost driver and reasonableness of the decision-making process were considered in determining the need for a project. Where growth is a driver, underlying estimates of growth are compared to the shorter term estimates used for pricing purposes, to determine whether the timing of the project could be deferred and savings made. As previously noted, the Authority's consultants did not scale capital expenditure for adjustments to short-term demand forecasts.

In assessing the efficiency of the sampled projects, the Authority's consultants have reviewed the scope and standard of each project and its cost and timing. In particular, the consultants have reviewed the cost estimates against available benchmarks and reviewed the cost estimation process adopted. Where a competitive tender approach was adopted and the cost therefore reflects market rates, these have been accepted as efficient.

The sample chosen for review of prudency and efficiency included the 10 largest projects (not previously subject to detailed review) to be commissioned in 2012-13[43]. The Authority focussed on projects commissioned in 2012-13 given their impact on the 2012-13 MAR. For Unitywater, this resulted in a sample of projects for review which accounted for 29.4% of Unitywater's total commissioned capital expenditure program in 2012-13 (excluding contributed assets[44]).

The list of capital expenditure programs reviewed in detail for 2012-13 is shown in the table below. Halcrow reviewed the capital expenditure on an 'as incurred' basis, as this reveals the annual expenditure stream over the life of the project. SKM was appointed to review Kawana as Halcrow was conflicted out of the review of this project.

[43] While the Authority reviewed Kawana STP in 2010-11, the project had not been progressed sufficiently to be assessed against the efficiency criteria. Therefore, as this project was not subject to detailed review the Authority has included this project in the sample.

[44] Contributed assets were excluded from the sample of projects for detailed review as a detailed list of contributed assets was not provided and they typically reflect small value local network infrastructure.

Table 2.36: Capital Expenditure Programs Reviewed ($'000)

Project	*Activity*	*Commissioned in 2012-13*	*As incurred in 2012-13*
1. Mary River Rd Cooroy – Cooroy STP Upgrade	Wastewater	20.66	4.36
2. Upgrade Woodford Wastewater Treatment Plant	Wastewater	16.61	5.72
3. Brendale WWTP Upgrade (Stage 3)	Wastewater	13.33	1.10
4. Main Dr Parrearra – Kawana STP Optimisation*	Wastewater	11.60	9.05
5. GIS Establishment	Other	6.96	3.54
6. Asset Management System	Other	5.33	1.36
7.System Enhancements and Improvements	Other	4.79	4.79
8.Communications Infrastructure Upgrade Program	Wastewater	4.79	2.56
9.Sunshine Motorway Sippy Downs – Town Centre Trunk	Wastewater	4.21	3.36
10. Wastewater pumping station	Wastewater	4.10	1.90
Total Sampled Expenditure		92.41	39.69
Total Capital Expenditure		**313.79**	**209.08**

*Note: Total capital expenditure excludes contributed assets of $37.59 million . *Reviewed by SKM as Halcrow was conflicted. Source: Unitywater supporting information.*

Mary River Road Cooroy – Cooroy STP Upgrade

The Cooroy STP, which has been in operation for around 40 years, is a traditional trickling filter treatment plant that discharges to the Mary River, a sensitive waterway. The STP, which has a design capacity of 4000EP, is currently operating beyond its hydraulic and nutrient load capacity, with an average loading of 4400EP currently recorded.

The STP regularly exceeds its environmental discharge licence and, in the 12 months from July 2009 to June 2010, recorded 125 breaches of licence conditions. As a result of these infringements, Unitywater was required by DERM to prepare a Transitional Environmental Program (TEP), which provided an undertaking to upgrade the existing STP.

On the basis of the forecast levels of growth within the catchment, Unitywater proposed to incrementally upgrade the existing STP over two stages: by initially constructing a low energy oxidation ditch treatment process with a design capacity of 6,250EP; and then, add an additional clarifier at a later date, in order to increase the capacity to 9,250EP.

The capital expenditure proposed is $4.36 million in 2012-13.

Table 2.37: Mary River Cooroy – Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	1,936	13,926	4,356	0	20,218

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

Halcrow noted that the primary drivers for the investment are compliance, growth and maintenance.

As highlighted above, the STP regularly exceeds its environmental discharge licence conditions. Additionally, the new environmental discharge licence requires a better quality effluent to be produced by the new facility.

Halcrow stated that on the basis that Cooroy STP is around 40 years old, is operating beyond its design loading capacity and regularly exceeds its environmental discharge licence conditions, upgrade of the STP is both necessary and prudent.

Efficiency

Halcrow considered that Unitywater has adopted a sensible approach to the project, designing a solution that enables phased delivery of additional treatment process elements when required.

However, Halcrow noted that there had been a significant amount of re-design required – inflating the design costs by an estimated 50%. This was necessitated as the original SCRC design allowed for ultimate catchment loading, a proportion of which may never be realised. Unitywater had undertaken a NPV analysis which accounted for whole of life costs, and the final solution had the lowest initial capital cost and lowest ongoing operating expenditure.

Although subject to additional procurement costs, Halcrow considered the approach to procurement to have been both beneficial and cost effective. By involving a select number of contractors in the project definition phase, Unitywater had identified a number of innovations that has reduced the contract price by a material amount. Further, the consolidation of the Cooroy and Woodford STP upgrade projects into a single contract also delivered a reduction in the lump sum tendered price, reducing Unitywater's management and procurement costs[45].

Halcrow noted that the contracted cost of constructing the scheme has been subject to significant cost variance, with the construction price moving from $12.2 million to $14.7 million. This represented a 20% increase in construction costs, which was in excess of the available contingency allowance. Halcrow stated that this raised concerns with the detailed design process as it appeared that a number of significant elements were not accounted for, despite the project being subject to both design and re-design.

Overall, Halcrow considered the project to be efficient and recommended that the forecast expenditure be re-profiled to reflect the latest expenditure forecasts submitted by Unitywater, with a downwards adjustment of $936,000.

[45] The Woodford STP upgrade was also sampled by the Authority – see the next sampled project review.

Table 2.38: Mary River Cooroy – Revised Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	1,936	13,926	4,356	0	20,218
Adjustment	-	-3,062	2,126	-	-936
Recommended	1,936	10,864	6,482	0	19,282

Note: Capital expenditure as incurred Source: Halcrow (2012).

Conclusion

Halcrow considered the project to be prudent on the basis that the primary driver of growth, compliance and maintenance had been demonstrated.

Halcrow considered the project to be efficient on the basis that Unitywater adopted a sensible approach to the project, designing a solution that enables phased delivery of additional treatment process elements when required. Halcrow recommended that the expenditure profile be updated to reflect Unitywater's latest expenditure forecasts.

The Authority accepts Halcrow's recommendation that the project is prudent and efficient and that the expenditure profile be updated to reflect the latest expenditure forecasts.

Upgrade Woodford Wastewater Treatment Plant

Woodford STP is a conventional activated sludge plant that has been in operation for 34 years. Woodford STP discharges directly to the Stanley River, which ultimately flows into Somerset Dam, a regional drinking water storage. The STP, which has a design capacity of approximately 2000EP, is currently operating at or near its hydraulic and nutrient load capacity, with an average loading of 1960EP currently recorded.

Unitywater advised that there have been a number of flow limit breaches recorded, whereby the STP exceeds its environmental licence. Additionally, Woodford is a key growth area, with 70-90 additional lots developed on an annual basis. As the current rate of growth is forecast to continue, the frequency of licence failures is also likely to increase.

Unitywater proposes to incrementally upgrade the existing STP over a number of phased stages. Unitywater proposes to initially utilise the existing STP infrastructure and footprint, to construct a new inlet works and clarifier in order to increase the STP capacity to 2600EP. This will provide sufficient capacity until 2020, following which an irrigation farm will be established with 700EP package plants added in 2021 and 2031, as required.

The capital expenditure proposed is $5.72 million in 2012-13.

Table 2.39: Woodford Wastewater Treatment Plant – Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	592	8,314	5,721	0	14,626

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

The primary drivers for investment are compliance, growth and maintenance.

As highlighted above, the STP is at risk of exceeding its environmental discharge licence conditions. In the last three years (up to February 2012), Woodford STP has recorded 17 wet weather flow limit breaches and 14 dry weather flow limit breaches of licence conditions. As the rate of growth within the catchment continues to increase, the frequency and impact of the licence breaches will increase. In addition to the flow limit breaches, the STP has been subject to a number of odour complaints which also represent non-conformances with the environmental licence. On this basis, discharge licence compliance is the key driver for investment.

Woodford STP has been operating near its design hydraulic and nutrient loading capacity of 2000EP. An average loading rate of 1960EP is currently recorded, with growth within the catchment forecast to ultimately reach 4,500EP. Additionally, the Woodford STP is 34 years old, with the associated inlet works, switchboards, instrumentation and sludge dewatering equipment nearing the end of its design life which needs to be maintained.

Halcrow considered that as the Woodford STP is 34 years old, is operating beyond its design hydraulic and nutrient loading capacity and regularly exceeds its environmental discharge licence conditions, upgrade of the STP is both necessary and prudent.

Efficiency

Halcrow considered that Unitywater has adopted a sensible approach to the project by scaling down the initial proposals to provide Class A water, and designing a solution that enabled phased delivery of additional treatment process elements, as and when growth within the catchment demanded it. Halcrow noted that Unitywater has undertaken a NPV analysis which accounted for whole-of-life costs as well as the capital cost and that the final solution had the lowest initial capital cost and relatively low ongoing operating expenditure.

Although subject to additional procurement costs, Halcrow considered the approach to procurement to have been both beneficial and cost effective. By involving a select number of contractors in the project definition phase, a number of innovations reduced the contract price by approximately $0.22 million. Halcrow stated that the consolidation of the Woodford and Cooroy STP upgrade projects into a single contract has also delivered a reduction in the lump sum tendered price and should also reduce Unitywater's management and procurement costs.

Halcrow noted that the contracted cost of constructing the scheme has, however, been subject to significant cost variance, with the construction price moving from $8.33 million to $9.42 million. This represents a 13% increase in construction costs, which exceeds the contingency allowance. However, savings to other aspects of the project delivery process have resulted in a forecast outturn cost of $13.5 million. This represents a 9% reduction in the forecast cost assumed in the financial profile shown in Unitywater Submission (excluding capital overhead allowances), thereby demonstrating efficiency of the project delivery process.

On this basis Halcrow considered the project to be efficient but recommended that the forecast expenditure be re-profiled to reflect the latest forecast expenditure profile.

Conclusion

Halcrow considered the project to be prudent on the basis that the primary driver of growth, compliance and maintenance had been demonstrated.

Halcrow considered the project to be efficient on the basis that Unitywater had adopted a sensible approach to the project, scaling down the initial proposals to provide Class A water, and designing a solution that enabled phased delivery of additional treatment process elements as required.

On the basis of its assessment, Halcrow recommended that the forecast expenditure be re-profiled to reflect the latest forecast reported by the Project Manager, resulting in a downwards adjustment of $2.685 million.

The Authority accepts Halcrow's recommendation that the project is prudent and efficient and that the expenditure be updated to reflect the latest expenditure forecasts.

Table 2.40: Woodford Wastewater Treatment Plant – Revised Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	592	8,314	5,721	0	14,626
Adjustment	-	-2,080	-606	-	-2,685
Recommended	592	6,234	5,115	0	11,941

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Brendale WWTP Upgrade (Stage 3)

The Brendale Sewage Treatment Plant (STP) Augmentation Project involves the implementation of minor improvements to the existing Brendale STP in order to delay the need for a major augmentation. This project is now referred to as 'Brendale STP Augmentation Stage 3'.

The existing STP (which has previously been augmented) was commissioned in 2000 with a design capacity of 30,000EP. Through process optimisation and minor works it currently treats approximately 41,500EP and is operating at or close to a point at which the plant will begin to breach conditions of the environmental licence with respect to water quality and odour emissions.

There is likely to be strong growth in industrial and residential developments inside and adjacent to the current catchment, with an estimated ultimate load for an expanded catchment of 77,000EP in 2030. To continue to treat sewage and discharge effluent in accordance with the current environmental licence, it will be necessary to either augment the existing STP or reduce the load on the STP within six to nine months. Should this not be possible, Unitywater may have to cap connections to the STP to avoid breach of the environmental licence.

The preferred option for the Brendale STP upgrade involved the diversion of sewage flows from the Brendale catchment to QUU and undertaking interim works including wet weather bypass, odour control and improvements to recycled water management at the Brendale STP.

The capital expenditure proposed is $1.10 million in 2012-13.

Table 2.41: Brendale WWTP Upgrade – Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	896	10,651	1,108	0	12,655

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

The major drivers of this project, as identified by Unitywater, are:

(a) growth – to meet the increasing population in the catchment;

(b) compliance – to meet the compliance requirements in respect of odour control, effluent discharge, plant bypass flow facility and recycled water quality; and

(c) renewals – refurbishing some elements of the treatment plant clarifiers and sand filters.

Halcrow commented that the drivers for this project are well defined, which has led to the development of a suitable solution.

Halcrow considered that Unitywater has demonstrated prudence in delivering this project. Halcrow noted that from the early planning stages options have been identified that allow expenditure to be appropriately delayed, whilst still meeting obligations and drivers related to growth and compliance. Halcrow stated that as would be expected, renewals expenditure was also required for this project and these have been carefully selected to ensure that project costs were minimised. Unitywater has also shown prudence in reusing the Murrumba Downs WWTP odour control unit at Brendale STP.

Efficiency

With regards to efficiency, Halcrow noted that Unitywater has adopted a flexible delivery approach in order to keep costs down. Updated information provided by Unitywater to Halcrow indicates that the total project cost to date is $10.95 million with a forecast final cost of $11.73 million (on an as incurred basis).

Unitywater identified the primary cost differences between the business case plan and the final project plan as follows:

(a) QUU diversion works removed from this project ($2.83 million);

(b) reuse of the Murrumba Downs WWTP odour control unit at Brendale STP for odour control at the biosolids building which provided an approximate saving of $4 million. Halcrow noted that this was an innovative solution as Unitywater was able to utilise an existing temporary odour control facility that was no longer required at Murrumba Downs WWTP; and

(c) addition of Sludge Storage Hopper and Conveyors to project scope - this was identified (after the approval of the Business Case) at one of the early design meetings with the key stakeholders. Safety concerns were raised about the number of truck movements required on site to process the sludge at Brendale STP using the existing facility. It was also difficult to manage the odours with the existing sludge handling facility as the sludge storage truck was not sealed. After a detailed investigation it was identified that an additional 80 tonne storage hopper and a new out loading bay would resolve these issues. The new sludge storage hopper is fully sealed which made it

much easier to contain and extract the odours. This would also provide operational savings by reducing the need to remove the sludge trailers from sites as frequently.

Halcrow stated that given the project is nearing completion, it is expected (based on the information reviewed) that Unitywater should deliver the project under budget.

Base on the above Halcrow considered this project to have been delivered efficiently and recommended that the expenditure profile be amended to reflect the updated information provided by Unitywater.

Conclusion

Based on the information above Halcrow considered the project to be prudent and efficient and that the expenditure profile be amended to reflect the updated information provided by Unitywater with a downwards adjustment of $927,000.

The Authority accepts Halcrow's recommendations with regards to this project.

Table 2.42: Brendale WWTP Upgrade – Revised Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	896	10,651	1,108	0	12,655
QCA Adjustment	-	-	-927	-	-927
QCA Recommended	896	10,651	181	0	11,728

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Kawana STP Stage 4 Optimisation

The Kawana STP is one of several major wastewater treatment facilities in the Sunshine Coast area. In recent years, population growth in and around the Kawana catchment has increased and future population predictions indicate this growth will continue over the next 20 to 30 years.

The Kawana STP is reaching its design capacity and the plant requires a major upgrade to facilitate growth from its existing connected catchment together with planned sewage diversions from the adjacent Maroochydore STP catchment. A future Stage 5 upgrade is planned for commissioning in 2017-18 and will include a new secondary treatment train and a significant upgrade to the ocean outfall.

In order to treat current flows and prepare for proposed catchment diversions, the Kawana STP requires an immediate minor upgrade which forms the Stage 4 Optimisation. The Stage 4 upgrade is to maintain the hydraulic and treatment capacity of the plant until the ultimate Stage 5 augmentation is implemented. This review concerns the work associated with the Stage 4 Optimisation only.

While the Authority had previously reviewed the Kawana STP as part of the 2010-11 review, the project had not been progressed sufficiently to be assessed with regards to compliance with procedures, scope, standards, costs, timing and deliverability. Therefore, the Authority has retained this project in the sample for review in 2012-13. SKM was appointed to review this project as Halcrow was conflicted.

Table 2.43: Kawana STP Optimisation – Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*Total*
Unitywater Proposed	546	1,668	9,058	11,602*

*Note * Total reflects expenditure as commissioned, other data is as incurred. Source: SKM (2012).*

Prudency

SKM noted that compliance and growth are the primary drivers for this project.

SKM reviewed the assumptions and calculations on growth and noted that for the planning horizon of 2011 to 2017, the growth rates from the SCRC model had been applied to the catchment. SKM considered this to be a conservative approach. The Business Case provided a comparison of the flows from the SCRC model with historical data on actual flows received by the STP. This historical data suggested that the growth rates from the SCRC model are between 22% and 34% higher than the historic growth rates derived from the incoming flows.

However, the Kawana STP is currently overloaded; the current load on the Kawana STP is equivalent to a population of 78,000, it was designed to treat the load from an equivalent population of 76,000. Based on this information, SKM was satisfied that an upgrade is required and that the relevant driver is growth.

SKM recommended that growth rates continue to be assessed and considered as part of the design of the Stage 5 Upgrade. Any future revision of the growth rates from the current conservative (i.e. high) growth rates may result in the ability of Unitywater to further delay the Stage 5 upgrade works.

SKM noted that the Kawana STP had experienced peak wet weather flows in excess of its hydraulic and treatment capacity. As growth continues in the catchment, the risk of events occurring in excess of the plant capacity will increase, which would lead to the Kawana STP breaching its environmental licence. Non-compliance with the environmental licence pose serious operational and compliance risks to Unitywater under the *Environmental Protection Act 1994* should Unitywater not undertake works to improve the treatment plant process capacity and Mooloolah River outfall capacity.

In response to an application by Unitywater, the DEHP has modified the environmental licence, to enable Unitywater to operate the STP to bypass screened and settled influent flows, in excess of three times average dry weather flow (ADWF) and up to five times ADWF, to the Pacific Ocean outfall and treated flows up to 807 L/s to be discharged through the Mooloolah River outfall. SKM considered that the revised discharge licence conditions combined with the Mooloolah River outfall upgrade will allow the Kawana STP to discharge wet weather flows for the Stage 4 design horizon. This change has enabled a non-infrastructure solution to be implemented and the existing assets to be operated more efficiently, enabling the Stage 5 augmentation (i.e. the following stage) to be delayed for a period of five years.

SKM assessed the project as prudent.

Efficiency

SKM considered that the scope of works allows Unitywater to meet its renegotiated licence, whilst allowing for the more significant upgrade to the STP to be deferred. In addition, the scope is mindful of the future works, which reduces the works required during the Stage 5 upgrade. As such, SKM concluded the scope of work is appropriate and reasonable.

SKM noted that Unitywater had undertaken an extensive investigation of Kawana STP. The proposed scope for this project has been developed through numerous studies and SKM was satisfied that suitable options had been identified and a vigorous assessment of these options had been undertaken.

SKM reviewed the costs associated with the multiple elements of the Kawana STP Optimisation Project. SKM noted that due to the advanced nature of this project, all elements of the project have now been tendered. Where available, SKM has reviewed the tender documentation, and have found the processes used to be reasonable and concluded that the resulting prices were competitive.

SKM noted that the Kawana STP Optimisation Project is being managed via an Engineer, Procure, and Construction Management (EPCM). As such monthly cost estimates have been produced (i.e. the EPCM Cost Report). In the response to SKM, Unitywater noted that based on the costs to 30 August 2012, the project is currently forecasting an under spend.

SKM recognised that the EPCM Cost Report reflected the information known at a single point in time and that this is subject to change as the project progresses. However, SKM considered that as there is still substantial work to be completed, SKM believed that the best information available should be used in the Authority's cost model i.e. revise the forecast downwards to reflect the information provided by Unitywater.

Conclusion

SKM assessed the project as prudent on the basis that the primary driver of growth and compliance has been demonstrated.

SKM assessed the project as efficient on the basis that an appropriate scope of works, acceptable standards of service and reasonable project costs have been demonstrated. However, the project costs as of 30 August 2012 show that the project is currently anticipating a cost under-run of $192,000. SKM recommended and that the proposed capital expenditure be amended to reflect this underspend, noting that the forecast would still include a contingency of 10% on project management and construction costs. Further, the 2011-12 profile has been adjusted to reflect actual value for that year leading to a total downwards adjustment of $513,000.

The Authority accepts SKM's findings in relation to this project and that an adjustment should be made to the capital expenditure profile.

Table 2.44: Kawana STP Optimisation – Revised Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	546	1,668	9,058		11,602*
QCA Adjustment	-	-321	-101	-	-513*
QCA Recommended	546	1,347	8,957	-	11,090*

*Note: Capital expenditure as incurred unless otherwise marked. * Capital expenditure as commissioned. Includes capitalised interest. Source: SKM (2012),*

GIS Establishment

The Unitywater Geographic Information Systems (GIS) Establishment Project (GISEP) is designed to deliver an integrated (i.e. enterprise-wide) spatial environment and improved spatial data quality. This project is intended to empower Unitywater staff by providing an

easy to use spatial environment with associated reliable data to aid quality and timely, effective decision making. The GISEP will form part of the broader asset management system and interface with the Consolidated Asset Management System (CAMS) project.

Prior to the GISEP, Unitywater inherited two legacy maintenance management systems which were not well developed and were lacking basic structures such an asset catalogue. It was recognised that having two different maintenance management systems and processes would result in a fragmented, inconsistent approach to management of assets, which ultimately leads to inconsistent customer service standards.

At the same time it was identified that there would be significant inefficiencies and costs associated with maintaining both of the legacy systems. Furthermore, these systems were tied to previous Council systems and negotiated Service Level Agreements (SLAs) that had a defined end date (30 June 2012) after which all ties to constituent Council systems were to be removed.

The overall objective of the project is to:

(a) build a Unitywater GIS capability to replace legacy systems/applications and address duplication and gaps that Unitywater has inherited from its constituent Councils;

(b) improve data quality and standardise business management processes; and

(c) facilitate the CAMS project requirement to have a defined set of GIS functionality in place by mid-2012.

Table 2.45: GIS Establishment – Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	0	3,416	3,543	0	6,959

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

Halcrow noted that there was a clear need for the implementation of the proposed system. However, the major drivers for this project were not clearly articulated by Unitywater in the documentation reviewed. Notwithstanding this, Halcrow has identified the major drivers as follows:

(a) efficiency – different systems and processes would result in a fragmented, inconsistent approach to the management of assets;

(b) risk management – if one or both of the Councils decide to stop providing GIS services under their SLA, Unitywater would be left without GIS coverage for part or all of its area of operations;

(c) compliance with Customer Charter – if Unitywater did not introduce a new streamlined system, it would be unable to perform operations in a manner that meets customer expectations;

(d) integration/Consolidation of Systems – provision of a single GIS system and mapping capability incorporating data from the constituent Council systems, thereby facilitating the consolidation of processes in a centralised system; and

(e) continuous improvement – implementation of a system that supports improvement of data quality and business processes.

Following a detailed assessment of the benefits (tangible and intangible) associated with options including 'do nothing', implementation of a base GIS system only and full implementation of a system incorporating all geospatial components, the full system implementation was adopted. The project is being delivered in two phases: Phase 1 is comprised of the system implementation, data migration and decommissioning of the legacy systems; whilst Phase 2 will involve data quality improvements and further development/implementation of the enhanced system capabilities.

Halcrow considered that Unitywater has demonstrated prudence in selecting this project for priority in years 2011-12 and 2012-13. Halcrow noted that the full implementation of the project will support and drive efficiency related to core functions of the business.

Halcrow commented that whilst a project of this nature may have been the subject of more extensively staged implementation at other existing water utilities, Unitywater has captured the opportunity to implement a system that interfaces with much of the organisation, whilst simultaneously allowing legacy systems to be decommissioned. Halcrow considered that the phasing and approach of this project is also logical and reasonable.

Halcrow stated that there is a clear need for this project and that this project would also lead to intangible benefits.

Efficiency

Halcrow stated that given that Phase 1 is complete (the necessary tools for data management) there is the need to immediately follow with implementation of Phase 2 which will see data improvements and process automation. Halcrow considered that once the implementation of Phase 2 is completed, the real efficiency gains for the organisation will be realised. Operating expenditure savings amounting to $4.4 million have been identified by Unitywater as tangible benefits of this project and it is expected that these will begin to be realised from 2014-15 onwards based on the planned timeframe for full system rollout.

Halcrow considered that overall, the implementation of this project appears to be efficient. Halcrow noted that the documentation is clear, options have been assessed and procurement strategies considered. Furthermore, the final outturn cost was significantly lower than expected for Phase 1 ($2.9 million instead of $3.5 million).

Halcrow advised that monitoring of benefits be undertaken, and a process be implemented by Unitywater to confirm whether the business is achieving the desired efficiency gains, and that the findings be reported to the Board. In the event that the anticipated benefits are not being achieved, investigation should be undertaken to identify appropriate remedial actions so that the benefits for the organisation are maximised.

Conclusion

Halcrow considered this project to be prudent and efficient and recommended that the expenditure profile be reduced by $506,000 to reflect the outturn cost for phase 1 (2011-12) and reduction of the Phase 2 contingency to 10% (reduce 2012-13 by $296,000).

The Authority accepts Halcrow's findings that the project is prudent and efficient and also supports its recommendation that Unitywater monitor and review the benefits achieved from this project. The Authority considers that Unitywater should provide information on these benefits and cost savings in future reviews.

Table 2.46: GIS – Revised Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	0	3,416	3,543	0	6,959
QCA Adjustment	-	-506	-296		-802
QCA Recommended	0	2,910	3,247	0	6,157

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Asset Management System

At the time of formation, Unitywater inherited multiple Asset Management Systems (AMS) from the former Council water service providers (Sunshine Coast Water and Moreton Bay Water) that previously provided functionality to support the individual needs of each provider. Unitywater observed the need for a single comprehensive AMS that supports organisation-wide asset management. Furthermore, ongoing Council provision of these services under SLAs had a defined end date (30 June 2012) after which all ties to the constituent Council systems were to be removed.

The proposed CAMS involved the review, selection and implementation of a single AMS across Unitywater. The project provides the opportunity to improve Unitywater's asset management performance by adopting the best practices from both of its predecessors and other sources; such improvements may be in the form of business processes, systems and/or data management.

The scope of this project includes implementation of the following functionality:

(a) asset registers;

(b) maintenance management;

(c) mobile computing for approximately 350 field staff;

(d) timesheets;

(e) work order costing against assets;

(f) asset performance and condition data collection;

(g) asset-related KPI reporting; and

(h) asset accounting.

The AMS is intended to be used to manage all asset classes including water and sewerage networks (including reservoirs and pumping stations); STPs; land and buildings; fleet and plant and ICT assets.

Table 2.47: Asset Management System – Capital Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Untiywater Proposed	208	3,748	1,362	0	5,317

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

Halcrow noted that in assessing the options available for the implementation of its own AMS, Unitywater focussed primarily on assessment of the two legacy systems, 'Maximo' and 'Hansen' which were previously implemented in the northern and southern regions respectively. The benefits of adopting one of the existing systems was identified at an early stage. 'Maximo' was ultimately adopted as it presented the lowest cost option as well as rating slightly better than 'Hansen' on all other evaluation criteria.

Halcrow considered that Unitywater had demonstrated prudence in selecting this project for priority in its capital program and that a need for this project was evident. Halcrow stated that Unitywater had quantified the project benefits, identified risks, considered options and conducted procurement in a transparent manner. Halcrow therefore considered this project to be prudent.

Efficiency

With regards to efficiency, Halcrow noted that based on the cross-business interaction, scale and nature of this project, there appears to have been some difficulty in initiating the project and having complete buy-in from all internal stakeholders. Halcrow stated that it understands that implementation and acceptance of new systems can be a difficult process to manage, however, Halcrow considered that Unitywater appears to have handled this process reasonably well and thoroughly documented its approach in doing so. Overall, Halcrow considered the project delivery to be generally efficient.

However, in the absence of a detailed understanding of the scope of each cost item associated with the project, and specifically the changes that have led to the significant variations in cost, Halcrow was not able to assess efficiency at a detailed level.

Halcrow noted that the expenditure profile shown in Unitywater's submission does not appear to correlate with either the Business Case ($5.6 million) or the most recent forecast provided by Unitywater ($8.7 million). Halcrow agreed that, given the stage of the project, the identified variations may be necessary. However, without a thorough understanding of the details of the additional scope involved, Halcrow noted that it was difficult to agree that efficiency was demonstrated for such a large variation.

Halcrow recommended that the expenditure profile be amended to reflect the minor variation at this stage to $5.6 million.

Conclusion

Halcrow considered this project to be prudent and efficient and recommended that the expenditure profile be amended to reflect updated information provided by Unitywater with an upwards revision of $298,000. The Authority accepts Halcrow's recommendation with regards to this project.

Table 2.48: Asset Management System – Revised Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	208	3,748	1,362	0	5,317
QCA Adjustment			298	-	298
QCA Recommended	208	3,748	1,660	0	5,616

Note: Capital expenditure as incurred. Source: Halcrow (2012).

System Enhancements and Improvements

Following the merger of the water businesses operated by SCRC and MBRC to form Unitywater in January 2010, 'Project Paramount' was initiated by Unitywater as part of the transformation process. The purpose of Project Paramount was to integrate the existing disparate technologies and systems from the two regional councils, in order to establish Unitywater's corporate systems.

Unitywater advised that as it moves into the next stage of its lifecycle, follow up investment is required to sustain the transformation process, with a focus on business improvement and efficiency. The System Enhancements and Improvements program provides a 'vehicle' to promote business improvement and efficiency initiatives that align with the strategic objectives of Unitywater.

For 2012-13, 15 capital projects have been identified, including two compliance related initiatives and 13 business improvement/efficiency initiatives, a number of which are 'spend to save' initiatives that will generate a positive return on investment. Overall, a combined 24 initiatives incurring capital and/or operating expenditure have been proposed for 2012-13.

Table 2.49: Systems Enhancements and Improvements – Capital Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	0	0	4,792	0	4,792

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

Halcrow noted that the System Enhancements and Improvements Program is a disparate grouping of relatively low value initiatives that deliver both business efficiency and compliance related objectives. Halcrow recognises the need for a water business to drive efficiency into its business operation and to seek business improvement, and on this basis consider a 'spend to save' type capital program to be prudent.

However, Halcrow was unsure as to why the compliance-based initiatives have been included within this project. Halcrow stated that whilst it may be good practice to apply the same level of rigour to these initiatives through the Investment Steering Committee, the fact that their delivery is mandatory, means they will not have been assessed against the same economic criteria.

Efficiency

Halcrow found it difficult to assess the efficiency of this project. Halcrow noted that at the time of review, the program was still in its infancy and the project scope for each of the initiatives had not yet been adequately defined. Accordingly, Halcrow considered that the overall costs may be under- or over-stated as the costs will only become fully apparent as the scope of work is developed for each initiative.

Despite the above, Halcrow stated that as the driver for many of the initiatives is business improvement and efficiency with the requirement to generate a positive return on investment, the program is likely to be efficient.

Halcrow recognises the benefits of a 'spend to save' type program of work, however, as there is still some uncertainty over the scope and nature of this program, Halcrow recommended that the budgets and expenditure are carefully monitored as much of the associated capital expenditure is speculative and the funding required could vary considerably from the estimates given.

Further, Halcrow noted that it was surprised that the entire program was forecast to be delivered in a single year, particularly as the program is still at a very early stage of development. On this basis Halcrow considered that it may be prudent to spread the forecast expenditure over two years, to provide sufficient opportunity to define and then deliver the program.

Conclusion

Based on the information provided, Halcrow considered this project to be prudent and efficient. However, as the project is at a very early stage of development, Halcrow considered that it would be prudent to split the cost of the project over two years as this reflects a more reasonable delivery profile.

The Authority accepts Halcrow's findings with regards to this project. Further, the Authority considers that Unitywater should ensure that the savings from these projects are estimated and embedded in future budgets.

Table 2.50: Systems Enhancements and Improvements – Revised Capital Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	0	0	4,792	0	4,792
QCA Adjustment	-	-	-2,000	2,000	-
QCA Recommended	0	0	2,792	2,000	4,792

Source: Halcrow (2012)

Communications Infrastructure Upgrade

Unitywater currently operates 11 separate Supervisory Control and Data Acquisition (SCADA) systems that are used to monitor and control the Northern and Southern region sewer and water network assets - there are a total of 871 sites, although not all are currently monitored. These assets include sewage pump stations, sewer mains, water pump stations and water mains spanning the former Redcliffe, Pine, Caboolture, Caloundra, Maroochy and Noosa Council (MBRC and SCRC) areas. Most of the legacy systems are approaching the end of their serviceable life.

The Communications Infrastructure Program (CIP) is part of the SCADA Upgrade Program which includes four sub-projects:

(a) SCADA Improvement Program;

(b) Switchboard Replacement Program;

(c) Instrumentation Replacement Program; and

(d) Communications Infrastructure Program.

The deliverables associated with this project will be construction/upgrade of 34 communication sites to meet the Network Design Specification which will support the future SCADA system communication requirements.

The proposed capital expenditure for 2010-11 to 2013-14 is shown in the table below.

Table 2.51: Communications Infrastructure Upgrade Program – Capital Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	143	2,079	2,558	0	4,790

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

The CIP is one component of the SCADA upgrade program. According to Unitywater, the need for the overall SCADA upgrade program was identified by MBRC prior to Unitywater being formed. MBRC identified the following drivers:

(a) to comply with and satisfy elements of the EPA approved Environmental Management Plan of 7 January 2005;

(b) to increase system capacity to provide remote monitoring to (low risk) sites not monitored by current SCADA systems and to cater for future increases in site numbers;

(c) to provide automated preventative control actions that will reduce the likelihood of overflow events;

(d) to reduce operational and maintenance costs by providing a common and robust SCADA system servicing water and sewer networks in Redcliffe and Caboolture districts with facility to integrate the Pine System. This will enable the establishment of an effective single control centre for the entire region;

(e) to assist in effective asset management by providing accurate recording and secure storage of process data that can be readily retrieved and analysed, and

(f) to facilitate future integration of operations and maintenance functions with SCRC networks and SCADA systems.

According to Unitywater, drivers for the overall SCADA Upgrade Program apply to the CIP.

Halcrow noted that during interviews Unitywater outlined how the failure of wastewater infrastructure caused various spills which resulted in fines for the previous Caboolture Shire Council. A commitment at the time was made to the EPA that closer monitoring of infrastructure issues via undertaking manual monitoring would be undertaken. As manual monitoring is expensive, labour intensive and presents health and safety risks, therefore remote monitoring using SCADA equipment was considered more appropriate.

Halcrow agrees in principle with the need for a SCADA upgrade.

Halcrow noted that the project has been subject to ongoing development and extension. Initially, MBRC awarded a contract primarily to undertake SCADA network design. At that stage, it was proposed that the contractor would subcontract detailed design and construction works, however, Unitywater subsequently excised this role from the scope of works in an endeavour to achieve greater efficiencies. Project delivery has continued to be impacted by delays in the contractor completing its component of the works.

An initial project budget of $3.8 million (including 10% contingency) was adopted in 2010. As a result of extensions to scope (additional sites to be serviced) and a transfer of some responsibilities from the original contractor to the design and construction contractor, the project cost is now estimated at $5.708 million.

Halcrow considered the undertaking of this project to be prudent as the automated preventative control actions will reduce the likelihood of overflow events (an environmental compliance requirement) and the associated business risks. Furthermore, Halcrow considered that the project should lead to an overall reduction in operation and maintenance costs which, although not quantified in the information provided, should begin to be realised from 2013-14 onwards. Halcrow therefore considered the project to be prudent.

Efficiency

In terms of efficiency, Halcrow stated that it is difficult to agree the project was initially delivered in the most efficient manner. The project appears to have been subject to a number of changes that have caused issues around timing and costs. Unitywater has, however, on several occasions sought clarifications and adjusted delivery method to expedite process or achieve costs savings. Halcrow noted that the decisions made appear to be in the best interest of the project, ensuring efficient delivery as the project progressed.

Halcrow further noted that the expenditure of $3.78 million budgeted in 2010 appears to be based on an efficient estimate. Unitywater has put forward proposed variations amounting to $2 million, however, this amount has not yet been approved by Unitywater management. Haclrow stated that some justification of the additional costs have been provided by Unitywater and that this is acceptable for a project at this stage of development.

Halcrow noted that as Unitywater is constantly tracking its costs in relation to this project and is providing early warning of cost-overruns, the costing process appears to be reasonable. Furthermore, Unitywater has demonstrated flexibility in delivering this complex project. Halcrow therefore considered this project to be efficient. However, Halcrow recommended that the expenditure profile be adjusted to reflect the latest project cost estimate provided by Unitywater (which implies a cost increase of $920,000).

Conclusion

Based on the information provided, Halcrow considered this project to be prudent and efficient. However, Halcrow recommended updating the expenditure profile to reflect the more updated information on the costs of the project.

The Authority accepts Halcrow's recommendation with regards to this project. As noted previously, the Authority also considers that any savings should be estimated and included in future budgets.

Table 2.52: Communications Infrastructure Upgrade Program – Revised Capital Expenditure Profile ($'000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	143	2,079	2,558	0	4,790
QCA Adjustment	-		920	-	920
QCA Recommended	143	2,079	3,478	0	5,700

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Sunshine Motorway Sippy Downs

The planned Sippy Downs Town Centre is currently an undeveloped greenfield site, located adjacent to the Sunshine Coast University. The site is zoned high density commercial/residential in the Maroochy Plan 2000 planning scheme, with an estimated serviced population of 4000EP at ultimate development.

In order to encourage development of the site and support a proposed supermarket development, the SCRC passed a resolution directing the then Sunshine Coast Water and subsequently Unitywater, to plan, design and construct a trunk sewer in the catchment to service the entire site.

The proposed capital expenditure of the Sunshine Coast Motorway Sippy Downs Project for 2010-11 to 2013-14 is shown in the table below.

Table 2.53: Sunshine Coast Motorway Sippy Downs Project – Capital Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	61	781	3,366	0	4,208

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

The Authority notes that Halcrow reports that the SCRC has resolved that this project take place. The available information also indicates that the Council resolution was also to resolve difficulties arising from the potential for a landowner to be prevented from developing their land by an intervening land holder.

The Authority considers that the primary driver for this project therefore appears to be compliance with the council resolution, driven by a consideration of future growth and regional economic benefits. The project is therefore prudent.

The key issue is whether water users should pay for this council resolution or the broader community council represents.

Under section 49A of the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009*, an entity's participating council may give the entity a written

direction about its annual capital works program. The council may only give the direction if it is satisfied the direction is necessary and in the public interest, and its compensation liability has been agreed under section 99BZD. Under section 99BZD, the council has a liability to compensate an entity for any direct and reasonably anticipated financial detriment that will or may suffer because of a direction.

The Authority notes that the information currently available indicates that Council decided that the project would be provided by the water business, and funded by contributions from developers once development actually occurred. It was noted that there was a risk involved in spending funds only to have little or no take up of the development opportunities afforded by the investment in the short to medium term[46].

The Authority notes that it appears that the decision to proceed with the project reflects a bona fide expectation that the infrastructure will be required to meet future growth (but with a material risk that the development might not occur) and also clarified the issue of funding (to be recouped through developer contributions). As a result, Unitywater should seek to clarify funding of this project under current legislation to address the possibility that the anticipated development does not occur.

Efficiency

Halcrow considered that Unitywater has adopted a sensible approach to the project, ensuring a gravity solution is provided that is sensitive to the various local environmental issues.

However, Halcrow noted that the procurement strategy, which involved the separate procurement of planning/design services, followed by the tender for three separate supply and construct contracts, is not generally efficient as a combined procurement approach, as it results in additional management costs through significant duplication of effort. Whilst Halcrow understood the reasoning for the approach adopted, it is recommended that other procurement routes should normally be considered in order to ensure the efficient delivery of Unitywater's capital program.

Notwithstanding this, Halcrow still considered the development of the scheme to be efficient. When compared to the identified actual and proposed expenditure reported in Unitywater's submission there appears to be a 10% reduction in the cost from the forecast 2012-13 expenditure reported in the latest cost report. However, Halcrow recommended that the expenditure profile be adjusted to reflect the latest project cost estimate provided by Unitywater (which implies a cost decrease of $844,000).

Conclusion

Based on the information provided, Halcrow considered the project to be prudent and efficient. However, Halcrow recommended that the expenditure profile be adjust to reflect the updated information provided by Unitywater.

The Authority accepts Halcrow's recommendation with regards to this project.

The Authority considers that Unitywater should seek to clarify funding of this project under current legislation, if the anticipated development does not occur.

[46] Sunshine Coast Regional Council 2009. Sippy Downs Town Centre Implementation Strategy. 29 July 2009. Strategy and Planning Committee Agenda.

Table 2.54: Sunshine Coast Motorway Sippy Downs Project – Capital Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	61	781	3,366	0	4,208
QCA Adjustment	-61	-75	-710	-	-844
QCA Recommended	0	706	2,658	0	3,364

Source: Halcrow (2012).

Wastewater Pumping Station

Sewage Pumping Station SPS20X, which serves the North Kippa-Ring/Newport catchment, has a design capacity of 30 litres per second and it is hydraulically overloaded. The SPS has a reported history of wet weather overflow events, with three events recorded in the first three months of 2012. Development of the Newport development site, which is currently ongoing, will worsen the hydraulic inadequacy of the SPS. Based on the Redcliffe Catchment Sewerage Network Master Plan (2011), an estimated ultimate flow of 76 litres per second is forecast for the North Kippa-Ring/Newport catchment.

On the basis of the existing and forecast levels of growth within the catchment, Unitywater proposed to decommission the existing SPS20X and construct a new SPS on a dedicated site with an associated DN250 rising main.

The proposed forecast expenditure for 2010-11 to 2013-14 is shown in the table below.

Table 2.55: Redcliffe Wastewater Pumping Station – Capital Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	353	1,623	1,906	0	3,883

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Prudency

Unitywater identified growth as the primary driver for this investment, the majority of which is occurring in the Newport area.

At the time of the review, Halcrow found that the contractor has been on site since May 2012 and construction had commenced in mid-August 2012. Installation of the rising main across Hercules Road and construction of the new SPS20X off Kippa Road is ongoing (wet well sunk and emergency storage completed).

On the basis that SPS20X is already under capacity and load within the catchment is forecast to increase as new development comes on line in the Newport area, Halcrow considered the augmentation and relocation of the SPS and rising main is both necessary and prudent.

Efficiency

Unitywater advised Halcrow that the project is currently running two months behind schedule, primarily due to difficulty in obtaining access to the new SPS site through a parcel

of land owned by MBRC. Notwithstanding the above, the project is forecast for completion in late February 2013.

Halcrow stated that the procurement strategy, which involved the separate procurement of design services, followed by the tender for two separate supply and construct contracts, appears to have delivered some efficiency, with the agreed tender price around 30% lower than the estimated cost assessed by Unitywater at planning.

However, Halcrow noted that the delivery of the project is subject to some further risk, particularly relating to permanent access to the new SPS site. This issue has already incurred additional cost and may further impact on the efficiency of delivery if not resolved soon.

Halcrow reviewed the forecast final costs and noted a significant variation (approximately 12% increase overall). There had been a significant increase in land acquisition and management costs. Halcrow noted that obtaining permanent access to the new SPS site has been a significant issue for Unitywater and a $235,000 increase in land-related costs related to the management of these issues. Halcrow also noted that anticipated design costs have increased by a further $230,000, even though flood-related variations (as reported by Unitywater in the project summary report) only account for $103,000.

Halcrow stated that there appears to be significant variance between the forecast 2012-13 expenditure reported in Unitywater's submission and the forecast 2012-13 expenditure reported in the latest project cost report. On the basis of the assessment outlined above, Halcrow recommended that the forecast expenditure be re profiled to reflect the latest project cost report (being an increase of $217,000).

Conclusion

Based on the information provided, Halcrow considered the project to be prudent and efficient. However, Halcrow recommended that the expenditure profile be adjust to reflect the updated information provided by Unitywater.

The Authority accepts Halcrow's recommendation with regards to this project.

Table 2.56: Redcliffe Wastewater Pumping Station Project – Capital Expenditure Profile ($000)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*Total*
Unitywater Proposed	353	1,623	1,906	0	3,883
QCA Adjustment	-1,125 (over 2010-2012)		1,342	-	217
QCA Recommended	851 (over 2010-2012)		3,428	0	4,100

Note: Capital expenditure as incurred. Source: Halcrow (2012).

Non-Sampled Projects

Based on its findings, Halcrow did not consider it appropriate to apply an adjustment to the remainder of the forecast capital expenditure program. The proposed adjustments of the sampled projects were principally made to reflect the most recent project forecasts based on information provided by Unitywater for the purposes of this review. Halcrow did not consider that it has identified any systemic inefficiency that would justify a program wide adjustment either for 2012-13 or the balance of the forecast period. In particular Halcrow did not identify any systematic issues with contingency allowances (as for QUU).

The Authority accepts Halcrow's finding, and also notes that any savings in actual capital expenditure during 2012-13 will be taken into account in future reviews.

Halcrow made some further summary observations from the review as follows:

(a) based on the sample of schemes reviewed, Halcrow considered that Unitywater was delivering a justified and broadly efficient capital program. Unitywater had adopted a sensible approach to delivery, whereby the preferred solution often involves phased delivery to ensure additional capacity is provided on an as required basis;

(b) there was demonstrated evidence of the implementation of Unitywater's capital planning processes, including gateway approval. There was also evidence that approvals of budget variations are generally sought at an early stage. However for business support projects, variations were not always readily apparent;

(c) while there was evidence to demonstrate Unitywater has considered a range of procurement options, in some cases a number of contracts are tendered for a single output. Halcrow recommended more efficient procurement options be considered;

(d) there appears to be a number of legacy projects that have carried over from the council organisations that preceded Unitywater. Significant levels of project planning and re-design has been necessary to ensure a more prudent scope of work is delivered. Whilst this has resulted in additional planning and design costs, it has ensured projects have not been conservatively over-scoped; and

(e) ongoing monitoring of cost savings is required to ensure that the assumed benefits are actually realised as the projects are fully implemented.

Summary

On the basis of the detailed review of 10 sampled projects, the Authority has adjusted

2012-13 expenditure for all sampled projects, resulting in an overall reduction of 2.1% to capital expenditure commissioned in 2012-13. The adjustments reflect updated information provided by Unitywater to the Authority's consultants for the purposes of this review, and for one project a view that delivery of the program needed to be spread over two years. The Authority's consultants advised that these adjustments do not reflect systematic issues, and therefore cannot be extrapolated to the broader capital expenditure program. The Authority further notes that any savings in actual capital expenditure during 2012-13 will be taken into account in future reviews.

Some projects are intended to result in capital or operating savings going forward. The Authority considers that Unitywater should seek to ensure that these savings are estimated and included in future budgets.

Table 2.57: Review of Capital Expenditure for 2012-13*

Project	*Cost 2012-13*	*Prudent*	*Efficient*	*Revised Cost 2012-13*
1. Mary River Rd Cooroy – Cooroy STP Upgrade	4.36	Prudent	Updated cost provided by Unitywater	6.48
2. Upgrade Woodford Wastewater Treatment Plant	5.72	Prudent	Updated cost provided by Unitywater	5.12
3. Brendale WWTP Upgrade (Stage 3)	1.10	Prudent	Updated cost provided by Unitywater	0.18
4. Main Dr Parrearra – Kawana STP Optimisation	9.05	Prudent	Updated cost provided by Unitywater	8.96
5. GIS Establishment	3.54	Prudent	Updated cost provided by Unitywater	3.25
6. Asset Management System	1.36	Prudent	Updated cost provided by Unitywater	1.66
7.System Enhancements and Improvements	4.79	Prudent	Updated cost provided by Unitywater	2.79
8.Communications Infrastructure Upgrade Program	2.56	Prudent	Updated cost provided by Unitywater	3.48
9.Sunshine Motorway Sippy Downs – Town Centre Trunk	3.36	Prudent	Updated cost provided by Unitywater	2.66
10. Wastewater pumping station	1.91	Prudent	Updated cost provided by Unitywater	3.25

*Note: *Capital expenditure as incurred. Source: Halcrow (2012), SKM (2012)*

These adjustments are made to Unitywater's capital expenditure as incurred. The Authority has used the Unitywater model to calculate the effect of these adjustments on capital expenditure as commissioned (on which basis it is included in the RAB).

Table 2.58: Comparison between Unitywater and Authority's Capital Expenditure ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*
Capex (Unitywater)	181.11	234.33	351.38	250.98
QCA adjustments	-	-	-7.42	1.99
Total Capex	181.11	234.33	343.96	252.97

Source: Unitywater (2011) and QCA calculations.

On the basis of a detailed review of 10 sampled projects, the Authority has adjusted 2012-13 expenditure to reflect updated information provided by Unitywater. Unitywater should seek to ensure that savings arising from capital projects are estimated and included in future budgets.

2.7.3 Contributed, Donated and Gifted Assets

As noted above, the Ministerial Direction requires the Authority to accept as prudent and efficient contributed, donated and gifted assets (contributed assets) and capital expenditure funded through cash contributions and subsidies (capital contributions) for water and wastewater for the period 1 July 2008 to 30 June 2010.

The Direction also requires the Authority to accept that, in setting prices from 1 July 2008, the councils applied a revenue offset approach to account for contributed assets and capital contributions received and that this approach is to remain in effect until such time that the entity nominates that it will adopt the asset offset method. Where a change in methodology is adopted, the RAB is not to be adjusted retrospectively.

In April 2011, following a recommendation by an infrastructure taskforce in late 2011, the State Government announced its intention to impose maximum capital contributions for trunk infrastructure (including water, wastewater, transport and public parks). Under the legislation that was introduced in June 2011, the maximum capital contributions for all trunk infrastructure networks (including water, sewerage, transport and public parks) are:

(a) $28,000 for dwellings with three or more bedrooms;

(b) $20,000 for dwellings with one or two bedrooms; and

(c) Various rates for non-residential development, including $50-$70/m^2 gross floor area (GFA) for industry and $140-180/$m^2$ GFA for commercial.

Under the price monitoring framework, the Authority assesses whether the methodology adopted by the entities to forecast contributed assets and capital contributions is reasonable.

Unitywater's Submission

Unitywater submitted that it expected to receive $37.6 million in contributed, donated and gifted assets in 2012-13 and $27.4 million in capital (cash) contributions. Unitywater has continued to apply a revenue offset approach to the treatment of contributed assets and capital contributions.

Table 2.59: Unitywater – Contributed, Donated and Gifted Assets & Capital Contributions ($m)

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*Total 2012-15*
Contributed assets	55.10	31.50	37.60	39.10	40.20	116.90
Capital contributions	39.40	23.00	27.40	28.50	29.40	85.30
Total	**94.50**	**54.50**	**65.00**	**67.60**	**69.60**	**202.20**

Source: Unitywater (2012).

Unitywater noted that the forecast level of cash contributions and donated assets for each region and service has been based on the results of negotiations with the participating councils to set the level of developer charges in accordance with the draft State Planning Regulatory Provision (SPRP) which provides for Unitywater's agreed apportionment of the maximum adopted charge.

Unitywater based the forecast level of cash contributions and donated trunk assets on the actual results to the second quarter of 2011-12. The 2011-12 full year forecast was calculated by applying a factor of 12/7. In addition, a one-off volume increase of 15% for capital contributions and 14.7% for developer donations was applied in 2012-13. Unitywater also assumed that the mix between donated trunk and non-trunk infrastructure assets in the forecast years will remain consistent with that in 2010-11.

SKM noted that both the capital contributions and developer donations forecasts were not indexed [to account for population or account growth]. SKM also noted that the reason for the volume increase is not clear.

In response to queries relating to the increase of 15% in the forecasts for 2012-13, Unitywater submitted that:

(a) the original budget in 2011-12 for contributed assets and capital contributions was $70.0 million, that estimate was prepared in budget cycle February – May of 2010;

(b) when preparing the 2012-13 budget in January – February 2012, Unitywater considered the year to date developer receipts and estimated that for the financial year 2011-12 that the $70 million was not going to be achieved but put forward a lower estimate approximately 15% lower (that lower estimate that was included in the regulatory submission to the Authority of approximately $54.6 million);

(c) as the year progressed the earlier estimate of year end position for 2011-12 did not reflect actual events to June 2012. The actual results for 2011-12 were approximately $71.7 million which is close to the original budget for 2011-12 of $70.0 million;

(d) as a result of late information the Finance and Regulatory Services area in finalising the budget for 2012-13 reversed the original reduction of 15%, made in January 2012, as the actual developer contributions was closer more in line with the original budget than the revised lower forecast of year-end position.

Nonetheless, Unitywater submitted there was a downwards trend in receipts – with $94 million received in 2010-11, $71.7 million in 2011-12 and year to date estimates for 2012-13 indicating a current forecast of $58 million (lower than budgeted by $8 million).

Authority's Analysis

2011-12 Report

In its 2011-12 Final Report, the Authority noted that forecasting of capital contributions and contributed assets is a difficult exercise, but that accuracy is particularly important when the revenue offset method is adopted (as by Unitywater) and under annual pricing.

The Authority drew from property economics, existing approaches and relevant legislation to identify a range of factors that may influence the timing, nature and extent of contributions[47]. The Authority was unable to determine the relevance of these factors due to a lack of data. Therefore, the Authority accepted the entities' estimates of contributed assets and capital contributions for 2011-12 in its Final Report.

The Authority proposed to progress this issue in conjunction with the entities and to report on progress in its next price monitoring review. The Authority also accepted Unitywater's suggestion that a workshop be held to progress this issue (at an appropriate time).

Workshop

As part of the 2012-13 review, the Authority asked its consultants SKM to recommend improvements to progress the forecasting of capital contributions. In considering this issue SKM was required to convene and facilitate a workshop with the entities on this issue, noting the approaches adopted by the entities to date, industry best practice, the approaches in other jurisdictions and the availability of information.

SKM held a workshop with the entities. SKM provided an overview of the approaches previously recommended by IPART and the ESC to calculate charge rates.

Stakeholders at the workshop canvassed a range of methods for forecasting contributions:

(a) using existing charge rates and growth consistent with that used for pricing purposes. Stakeholders noted that any errors in OESR growth projections do not materially affect the revenue forecasts from fixed and volumetric water charges as there is a large component of existing connections and usage. However, as revenues from contributions are solely derived from growth, any errors can materially affect forecasts of contributions revenue;

(b) using existing charge rates and drawing on building approvals as a leading indicator of growth. This was the QUU method for forecasting revenues for Brisbane in 2011-12.

The Authority notes that the ABS also uses approvals as a key indicator for dwellings growth which then feeds into estimating population growth[48]. However, the ABS is oriented towards population estimates [validated using Medicare enrolments and

[47] These factors include population growth, the availability of land and subsidies for development, general economic activity, employment growth, interest rates and consumer confidence, and the triggers for payment of contributions.

[48] The ABS assumes that the percentage growth in building approvals equates to the percentage change in dwellings for the purposes of estimating population change. Further, that population growth lags building approvals – the ABS assumes that it takes around six months for a house to be completed and around 6-12 months for a flat/unit/apartment to be completed (pers. comm. T Dyson, ABS Regional Population Unit, 2012).

electoral roll data] and complementing building approvals with an extensive validation procedure using regional ABS staff and data from local councils on whether approvals are completed;

(c) using existing charge rates and longer term growth estimates, including those used for capital planning purposes (including from councils planning schemes) and/or the growth forecasts used in setting the charge. This is the current QUU approach in forecasting revenues for all council areas. This approach considers the availability of land and subsidies for development. Growth estimates of this kind tend to rely on OESR projections, with adjustments for local circumstances and planning models.

At the workshop, stakeholders noted that this approach has the advantage of using longer term growth data consistent with capital planning. However, it has the disadvantage of not reflecting current expectations (although adjustments can be made for these as in the QUU model);

(d) using an econometric growth model, based on statistical analysis of historical data on capital contributions revenues and leading and lagging indicators. Stakeholders noted that such a model would require historical data that is not available, could be complex and costly to develop and may not add to the accuracy of current forecasts;

(e) general approaches as applied in other jurisdictions. An ESC staff paper (2012) has noted that 'a simplified means of new customer contributions revenue forecasting commonly adopted by regulated networks and their regulators is to forecast NCC revenue using the historical share of gross capex that has been recovered through customer contributions'; and

(f) a hybrid approach, drawing on a number of these methods, and for scenario testing.

There was no clearly superior method for accurately forecasting revenues from capital contributions identified at the workshop that could be currently implemented in SEQ.

Further Issues

In considering this issue further, the Authority also notes that:

(a) forecasts of contributed assets appear to be more stable than forecasts of cash capital contributions and forecasting of the latter is the most difficult exercise;

(b) the impact of forecasting error would likely be reduced under an asset offset approach and a multi-year approach to price setting; and

(c) conceptually, all new connections derive from a building approval. The growth forecasts adopted for forecasting revenue from access charges and for forecasting revenue from capital contributions should be consistent.

In relation to Unitywater's current approach, SKM reviewed the materials submitted by Unitywater and concluded that it is unable to verify the methodology adopted by Unitywater to forecast its contributed assets and capital contributions.

SKM noted that for most years, forecasts of capital contributions and contributed assets are significantly below historical receipts. SKM noted that there appears to be little correlation between annual movements in dwelling approvals and either capital contributions or contributed assets. SKM concluded that this situation renders forecasting difficult.

The Authority notes that Unitywater's subsequent response to further queries (noted above) indicates that the forecasts of contributed assets and capital contributions from 2012-13 are based on up-to-date information as at June 2012 on 2011-12 receipts, whereas the information template reflects more out-of-date information in 2011-12 receipts. It is therefore understandable that a correlation cannot be found until there is more actual data collected over the course of business.

SKM recommended that until a more robust relationship can be developed to explain capital contributions and contributed assts, Unitywater uses the average of the previous three years of receipt as a basis for forecasts with adjustment to account for year-on-year changes in the forecast of EPs.

Unitywater did not favour this approach as it considered this would bias upwards the forecasts when the most recent information indicated a downwards trend in receipts. Unitywater noted that because developer contributions are currently tracking downwards, applying a three-year rolling average would result in a forecast for developer contributions in 2012-13 of $77 million. Unitywater's year-to-date total contributions of $21.6 million are lower than its budgeted-to-date total contributions of $24.4 million [a 12% shortfall].

Based on year-to-date contributions, and incorporating knowledge gained from major developers throughout the region, Unitywater's current forecast is for 2012-13 developer contributions to fall short of budget by approximately $8 million, resulting in a total of $58 million for the 2012-13 year. To the extent that a three-year rolling average had been applied in calculating forecast developer contributions, a $20 million (or 26%) potential error would arise. Unitywater argued that if a three-year rolling average is used as a means of forecasting developer contributions, the margin of error is likely to be significantly greater than if the current process is adhered to, which facilitates the incorporation of timely local knowledge regarding the state of development activity within the region.

Therefore, Unitywater proposes that the current budgetary and forecasting process for determining developer contributions, which provides for six-monthly reasonableness and sense tests to be applied, remains in place. Unitywater considered that maintaining the current process will reduce the margin of error that will occur between forecast and actual developer contributions in coming years.

As a further measure, the Authority has estimated the forecast that would apply using the average approach [over 2010-11 and 2011-12] adopted in other jurisdictions (see ESC paper above). This has resulted in an estimate of revenues from capital contributions between $49.4 and $97.8 million and an estimate of donated assets between $61.3 and $137.2 million, driven by the marked increase/decrease in capital expenditure to be commissioned in 2012-13. Unitywater's estimate of $27.4 million for capital contributions and $37.6 million for donated assets are significantly lower than the average historical percentage.

Conclusion

On the information presented to the Authority, and consistent with the outcomes from the workshop, there does not appear to be a clearly superior method for accurately forecasting the revenues from capital contributions for SEQ retail water entities. The Authority will continue to monitor this issue as data develops over the course of business.

The Authority notes that it has recommended (section 2.5 above) that the entities develop more sophistication in their demand forecasting for revenue/pricing purposes. There is a range of forecasting approaches that could be developed by the entities for this purpose. This work should also encompass the revenues from capital contributions.

The Authority has accepted Unitywater's 2012-13 forecasts of revenues from contributed assets and capital contributions.

2.8 Rolling Forward the RAB

In accordance with the Ministerial Direction and normal regulatory practice, the initial RAB is rolled forward to account for capital expenditure, inflationary gain, depreciation (return of capital) and disposals.

The Authority generally applies a straight line approach to depreciation. Under the Direction, the Authority must also take into account, for the period 1 July 2008 to 30 June 2010, evidence that depreciation has been calculated using the Minister's advised RABs allocated to council assets and existing useful lives.

Under the roll forward, indexation and depreciation are calculated on the assumption that forecast capital expenditure and disposal occur evenly throughout the year.

For indexation, the Authority is required under the Direction to use the annual June to June ABS CPI (all groups, Brisbane) for 2008-9 and 2009-10. Under the Information Requirements for 2012-13, the ABS CPI (all groups, Brisbane) is used for indexation in 2010-11 and 2011-12. The indexation from 1 July 2012 to 30 June 2015 is 2.48% per annum – the forecast of CPI that is consistent with the benchmark return on capital.

As noted above, actual capital expenditure from 1 July 2008 to 30 June 2010 is included in the RAB, while from 1 July 2010 only prudent and efficient capital expenditure is to be rolled forward. Further, where the entity chooses to apply the asset base offset approach, contributed assets and capital contributions are deducted from the assets to be paid for by users.

Unitywater's Submission

Unitywater adopted a straight line approach to depreciation based on existing and new asset lives contained in its fixed asset registers. Unitywater stated that it has adopted useful lives for capitalised assets on an individual basis, instead of useful lives on the broader asset class defined by the Authority which can result in assets with useful lives ranging from 20 to 100 years being grouped together and assigned a single average life.

Unitywater corrected its asset lives for errors identified by SKM in the 2011-12 price monitoring review, revising the life of billing systems from 58 to five years, and the life of building other than infrastructure housing from 20 to 60 years.

Unitywater submitted it would work through resolving any remaining issues in asset and tax lives during the 2012-13 review, rather than making non-agreed changes. As part of this process, Unitywater requested how modifications to existing asset lives should be made in the future as new information comes to light or on the basis of a desire to align statutory accounting and regulatory asset assumptions.

In relation to indexation, 2008-09 and 2009-10 were based on ABS CPI (all groups, Brisbane) of 2.02% and 3.20% respectively. For 2010-11 an index of 3.84% was used and for 2011-12 an index of 1.32%. From 2012-13 onwards, Unitywater used 2.48%.

Unitywater stated that disposals have been calculated based on the assumption that the majority of assets will have a nil disposal value. If an asset has a residual value, it is disposed of once it is depreciated to or below that residual value.

Unitywater's RAB roll-forward for water and wastewater are shown in the table below.

Table 2.60: Unitywater Asset Base Roll Forward – Water ($m)

	2008-09	*2009-10*	*2010-11*	*2011-12*	*2012-13*
Opening RAB	878.81	944.06	1,016.87	1,094.97	1,142.53
plus Capital expenditure	71.73	78.09	66.45	64.66	68.49
plus Indexation	18.43	31.30	40.27	14.84	29.18
less Depreciation	-20.94	-24.29	-28.50	-31.86	-35.22
less Disposals	-3.96	-12.30	-0.12	-0.09	-0.13
Closing RAB (QCA)	**944.06**	**1,016.87**	**1,094.97**	**1,142.53**	**1,204.85**

Source: Unitywater information template 2012 and QCA calculations

Table 2.61: Unitywater Asset Base Roll Forward – Wastewater ($m)

	2008-09	*2009-10*	*2010-11*	*2011-12*	*2012-13*
Opening RAB	1,150.50	1,199.70	1,412.71	1,524.82	1,676.00
plus Capital expenditure	57.70	225.13	114.66	169.66	282.89
plus Indexation	23.74	41.87	56.38	21.19	45.07
less Depreciation	-25.52	-52.75	-58.81	-39.57	-46.67
less Disposals	-6.73	-1.23	-0.11	-0.10	-0.13
Closing RAB	**1,199.70**	**1,412.71**	**1,524.82**	**1,676.00**	**1,957.16**

Source: Unitywater information template 2012 and QCA calculations.

Authority's Analysis

The Authority applied a straight line approach to depreciation as per the SEQ price monitoring model. The Authority has accepted Unitywater's adjustments to reflect corrections for errors in asset lives identified in the Authority's previous review.

Further adjustments should be made to reflect the best available information and on the basis that the value of assets is only recovered once. Ensuring an appropriate asset life should ensure that customers are paying for assets as they provide relevant services. The Authority would consider any amendments proposed by Unitywater to the information templates to facilitate the entry of relevant adjustments.

The Authority's opening RAB for water and wastewater activities as at 1 July 2012 ($2,812.00 million) is slightly lower than Unitywater's estimate ($2,818.53 million).

The difference primarily arises due to indexation. Consistent with the Direction and Unitywater's approach, the Authority has rolled forward the RAB for 2008-09 and 2009-10 using ABS CPI (all groups, Brisbane) of 2.0% and 3.2% respectively.

Under the Information Requirements for 2012-13, the ABS CPI (all groups, Brisbane) is used for indexation in 2010-11 and 2011-12. In accordance with the approach adopted in its

2011-12 review and in other regulatory sectors, the Authority has adopted a March to March CPI for this purpose, as this is the latest information available at the time of price setting. The relevant index values as reported by the ABS are 3.6% and 1.3%. These differ from the corresponding Unitywater values of 3.84% and 1.32%.

In relation to disposals, the Authority has accepted Unitywater's estimate for 2012-13.

Table 2.62: Authority's Asset Base Roll Forward – Water ($m)

	2008-09	*2009-10*	*2010-11*	*2011-12*	*2012-13*
Opening RAB	878.81	943.89	1,016.69	1,092.38	1,139.79
plus Capital expenditure	71.73	78.09	66.45	64.66	67.34
plus Indexation	18.25	31.29	37.79	14.62	29.10
less Depreciation	-20.94	-24.28	-28.44	-31.78	-34.98
less Disposals	-3.96	-12.30	-0.12	-0.09	-0.13
Closing RAB (QCA)	**943.89**	**1,016.69**	**1,092.38**	**1,139.79**	**1,201.13**

Source: QCA (2012).

Table 2.63: Authority's Asset Base Roll Forward – Wastewater ($m)

	2008-09	*2009-10*	*2010-11*	*2011-12*	*2012-13*
Opening RAB	1,150.50	1,199.48	1,412.47	1,521.25	1,672.21
plus Capital expenditure	57.70	225.13	114.66	169.66	276.62
plus Indexation	23.52	41.84	52.91	20.88	44.90
less Depreciation	-25.51	-52.75	-58.68	-39.48	-46.46
less Disposals	-6.73	-1.23	-0.11	-0.10	-0.13
Closing RAB	**1,199.48**	**1,412.47**	**1,521.25**	**1,672.21**	**1,947.14**

Source: QCA (2012).

Table 2.64: Comparison of Opening RABs

	2008-09	*2009-10*	*2010-11*	*2011-12*	*2012-13*
Unitywater Proposed Opening RAB	2,029.31	2,143.76	2,429.58	2,619.79	2,818.53
QCA Opening RAB	2,029.31	2,143.37	2,429.16	2,613.63	2,812.00
Difference	**0.00**	**(0.39)**	**(0.42)**	**(6.16)**	**(6.53)**

Source: Unitywater (2012), QCA (2012).

The Authority's estimate of the regulatory opening asset base for price monitoring purposes in 2012-13 is slightly lower than that of Unitywater.

The Authority's estimate of the closing asset value as at 30 June 2013 is $1,201.13 million for water and $1,947.14 million for wastewater.

2.9 Return on Capital

Under the Ministerial Direction, the Authority was required to advise the entities by 1 March 2011 and 1 March 2012 of the WACC benchmark for 2011-12 and 2012-13 respectively.

After taking into account all relevant issues, the Authority advised the entities on 15 March 2011 that it intended to adopt a WACC of 9.35% for the three-year period 2010-11 to 2012-13. The reasons for this decision are set out in Appendix B in the Authority's Final Report for 2010-11.

Unitywater's Submission

Unitywater adopted the Authority's advised WACC benchmark of 9.35% in its 2012-13 submission. Unitywater noted that it remained concerned about a number of the key parameters in the Authority's estimate. However, Unitywater noted that it would have the

opportunity to raise these issues with the Authority as part of the Authority-wide review of the WACC.

Authority's Analysis

As per the agreed price monitoring framework and the Authority's advice to the entities of 15 March 2011, the Authority has adopted a WACC of 9.35% for 2012-13. This is the same WACC as adopted by Unitywater.

The Authority's estimate of the return on capital resulting from the 9.35% WACC and the (updated) asset base is set out below. The difference in Unitywater's estimated return on capital therefore arises from its view of the RAB to which the WACC is applied, rather than the WACC applied.

The Authority notes that Unitywater's estimate of the return on capital is lower than that of the Authority despite Unitywater having a higher estimate of the RAB. This issue will be further addressed in the Final Report.

Table 2.65: Return on Capital ($m)

	Water Costs 2011-12	*Wastewater Costs 2011-12*	*Water Costs 2012-13*	*Wastewater Costs 2012-13*
Return on Capital (Unitywater)	103.89	149.96	108.55	167.17
Return on Capital (QCA)	105.18	150.20	109.74	169.32
Difference	**1.29**	**0.24**	**1.19**	**2.15**

Source: Unitywater 12-13 Revenue Forecast – Price Freeze Apr 4.xsls (2012), QCA (2012).

The Authority has adopted a WACC of 9.35% in accordance with the Ministerial Direction. This is consistent with the approach adopted by Unitywater.

2.10 Operating Expenditure

Operating costs include the cost of purchasing bulk water, as well as both retail and distribution costs such as materials and services (including chemical and electricity costs), employee, corporate and customer service costs.

The Ministerial Direction requires the Authority to recognise the Government's policy that the prices charged by the SEQ WGM[49] for bulk water storage, treatment and delivery are to be passed through to customers in full.

The Ministerial Direction also requires the Authority to accept the operational constraints imposed by the SEQ Urban Water Arrangements Reform Workforce Framework 2010.

In July 2012, the *South-East Queensland Water (Distribution and Retail Restructuring) Amendment Act 2012* revoked the workforce framework.

[49] On 1 January 2013, the SEQ WGM was merged into Seqwater. Bulk water charges are now collected by Seqwater.

The Authority engaged Halcrow to review the prudency and efficiency of Unitywater's forecasts of operational expenditure for its water and wastewater activities from 1 July 2012.

Unitywater's Submission

Unitywater proposed $258.52 million of operational expenditure for 2012-13 – $168.47 million for water and $90.04 million for wastewater.

Unitywater allocated its operational costs to the drinking water, other core water, wastewater, trade waste and other core wastewater services. Costs that are specific to a service and region are directly assigned, such as the costs of a wastewater treatment plant servicing a council area. Costs that span more than one service and region are allocated on the basis of a range of causal drivers. For example, corporate human resources costs are allocated on the basis of FTEs. Unitywater stated that it intends to conduct a comprehensive review of these drivers.

Unitywater applied cost and growth indices to forecast its operating costs, taking into account expected demand for services.

Operational Expenditure forecasts

Unitywater's forecast total operational expenditure over the period 2011-12 to 2014-15 for water and wastewater are set out in the tables below.

Table 2.66: Unitywater's Forecast Water Operating Costs 2011-15 ($m)

	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*
Bulk water costs	64.88	92.49	114.94	141.20	167.64
Employee expenses	18.59	21.27	21.81	22.49	23.30
Contractor expenses	6.19	5.13	2.92	3.03	3.16
GSL Payments	0.00	0.00	0.00	0.00	0.00
Electricity charges	1.31	1.08	1.59	1.80	2.04
Sludge handling costs	0.01	0.00	0.00	0.00	0.00
Chemicals costs	0.97	0.60	0.51	0.55	0.59
Other materials and services (not related to capital expenditure)	5.49	6.17	9.58	10.02	10.47
Licence or regulatory fees	0.08	0.09	0.13	0.14	0.14
Corporate Costs	14.58	14.03	13.53	13.83	14.61
Non recurrent costs	3.13	3.49	2.83	3.16	3.67
Indirect taxes	0.10	0.13	0.63	0.61	0.61
Total Operating Costs	**115.34**	**144.49**	**168.47**	**196.84**	**226.22**

*Note: Shaded data reflects Unitywater's forecasts for 2011-12 in its 2011-12 price monitoring submission. * Estimated actual. Source: Unitywater (2012), Unitywater (2011).*

Table 2.67: Unitywater's Forecast Wastewater Operating Costs 2011-15 ($m)

	2011-12	*2011-12**	*2012-13*	*2013-14*	*2014-15*
Bulk water costs	0.94	0.00	0.00	0.00	0.00
Employee expenses	31.38	29.95	28.63	30.64	32.20
Contractor expenses	12.84	11.72	10.39	10.88	11.34
GSL Payments	0.00	0.00	0.00	0.00	0.00
Electricity charges	5.52	5.27	7.05	7.99	9.03
Sludge handling costs	3.85	4.28	4.11	4.34	4.56
Chemicals costs	3.18	3.15	3.59	3.85	4.12
Other materials and services (not related to capital expenditure)	9.05	9.60	12.96	13.74	14.42
Licence or regulatory fees	0.17	0.28	0.26	0.27	0.29
Corporate Costs	20.61	19.66	18.72	19.14	19.02
Non recurrent costs	3.97	5.08	3.40	3.28	2.99
Indirect taxes	0.14	0.19	0.94	1.00	1.05
Total Operating Costs	**91.67**	**89.18**	**90.04**	**95.15**	**99.02**

*Note: Shaded data reflects Unitywater's forecasts for 2011-12 in its 2011-12 price monitoring submission. * Estimated actual. Source: Unitywater (2012), Unitywater (2011).*

Variation in 2011-12 costs from 2011-12 Submission

Overall, Unitywater's 2011-12 costs increased by $26.66 million from those budgeted in its 2011-12 submission, predominantly due to a rise in bulk water costs of $27.61 million.

Unitywater submitted that it sought to reduce operating expenditure by $10 million in its 2011-12 budget, through efficiency, deferral, cancellation, scope correction and reprioritisation. Unitywater also undertook a round of voluntary redundancies in 2011-12 which resulted in labour cost savings of $3.4 million and a reduction of 45 staff (36 relating to opex, nine to capex). Further, Unitywater increased the level of corporate support costs that were capitalised in 2011-12 from the budgeted $10 million to $21 million.

Business as usual operating cost increases in 2012-13

Unitywater applied generic cost indices and geographic specific growth factors to forecast certain operating costs (see table below).

Table 2.68: Operating Cost Indexes and Growth Factors

	Cost Index			*Annual Growth Factors*		
	2012-13	***2013-14***	***2014-15***	***2012-13***	***2013-14***	***2014-15***
Employees	4.3%	3.8%	3.4%	-	-2.7%	0.8%
Contractor	3.25%	3.5%	3.4%	-	2.4%	-0.1%
Bulk Water						
- Moreton Bay	As per Bulk Price Path			OESR	7.1%	7.1%
- Sunshine Coast				OESR	6.8%	1.7%
Electricity	19.5%	11.4%	11.4%	OESR	3.7%	3.4%
Chemicals	3.25%	3.5%	3.4%	OESR	7.5%	5.1%
Sludge Handing	3.25%	3.5%	3.4%	OESR	3.3%	0.4%
Licence & Regulatory fees	3.25%	3.5%	3.4%	-	3.3%	0.4%
Corporate, indirect tax & Non-recurrent costs	3.25%	3.5%	3.4%	-	0.0%	-2.1%
Material and services - Direct Costs	3.25%	3.5%	3.4%	OESR	3.3%	0.4%
Material and services - Network and Retail	3.25%	3.5%	3.4%	-	3.3%	0.7%

Source: Unitywater (2012), Halcrow (2012).

Unitywater further noted that of the $10 million budgeted to be saved in 2011-12, $2.8 million will now be expended in 2012-13, comprising $2 million for the deferred, but now fully operational, Kedron Brooke Scheme and $0.8 million in consultancy expenses.

Efficiency Gains

Unitywater submitted that it has adopted a range of initiatives to achieve efficiency savings. In some cases there are trade-offs between capital and operating expenditure that may result in operating expenditure increases:

(a) diverted sewage from Brendale to Luggage Point, a QUU plant, enabling the deferral of augmentation of Brendale and achieving savings (in capital expenditure) of $25.7 million. QUU will be recompensed for use of its plant;

(b) intensified the identification and removal of illegal stormwater connections. This will delay the need for augmentation of the wastewater network and improve environmental outcomes;

(c) rationalised its property portfolio leading to rent reductions, improved customer service and integration of work practices and support functions;

(d) introduced new information management systems (e.g. GIS, SCADA) to replace legacy councils' systems enabling the adoption of uniform area wide systems and procedures combined with improved operational efficiency;

(e) established a consolidated, central call system;

(f) improved labour productivity by:

  (i) staggering workforce start and finish times, reducing call outs and better matching availability with work volumes;

  (ii) introducing afternoon shift for field roles leading to better matching of workforce availability with work volumes;

  (iii) having field service crews start/finish shifts on site rather than at depots;

  (iv) adopting pay parity across workforce; and

  (v) calling for voluntary redundancies leading to a reduction of 45 in staff numbers (36 engaged in operational activities) saving of $3.4 million; and

(g) implemented new customer service and billing system.

Authority's Analysis

The Authority notes that, overall, Unitywater has forecast its total operating cost will increase from $233.67 million in 2011-12 to $258.52 million in 2012-13, an increase of 10.6% in 2012-13. When bulk water costs are excluded, Unitywater's operating costs increase by 1.7%.

In its review of prudency and efficiency of operating costs, the Authority draws on:

(a) high-level benchmarking of operating costs;

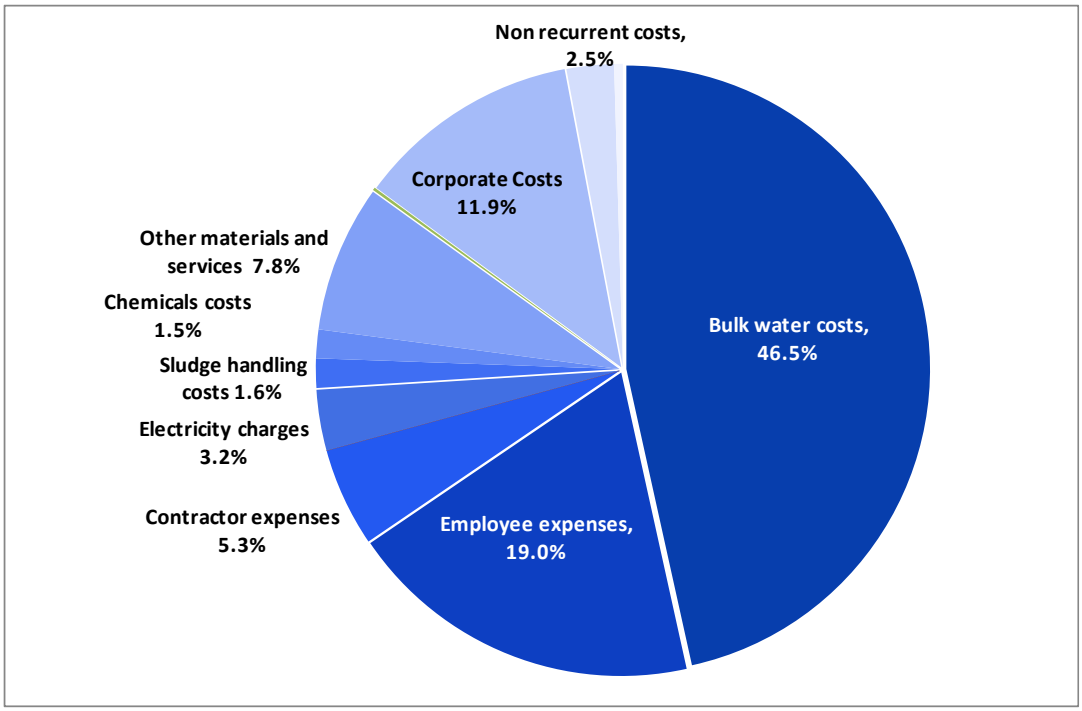
(b) a review of a sample of cost categories, including the cost and growth indices applied; and

(c) the efficiency targets set by the Authority in its 2010-11 Final Report.

The Authority engaged Halcrow to assist in its review of the prudency and efficiency of operating expenditure. The assessment takes into account relevant service standards, revised demand forecasts and the potential for efficiency gains and economies of scale.

Unitywater's operating cost categories are noted in the chart below.

Chart 2.6: Unitywater's Operating Costs 2011-12 to 2014-15



Source: Unitywater (2012).

Operational Budgeting

The Authority notes that in 2012-13 Unitywater did not conduct any benchmarking of the key components of its operating budget.

Given the large increases being proposed, the Authority recommends that Unitywater commence benchmarking as an integral part of its budget process, so as to inform decision making at all levels of the organisation. This should be done at an aggregate (overall) level of non-bulk operating costs, as well as for each of the key components of non-bulk operating costs.

Unitywater should only exclude specific non-recurrent expenses where this would assist in a more appropriate comparison with benchmark entities.

Prudency and Efficiency

The Authority benchmarked Unitywater's 2012-13 aggregate operating costs for water and wastewater against QUU and other distribution/retail water utilities (see table below).

Table 2.69: Unitywater Operating Cost Benchmarks

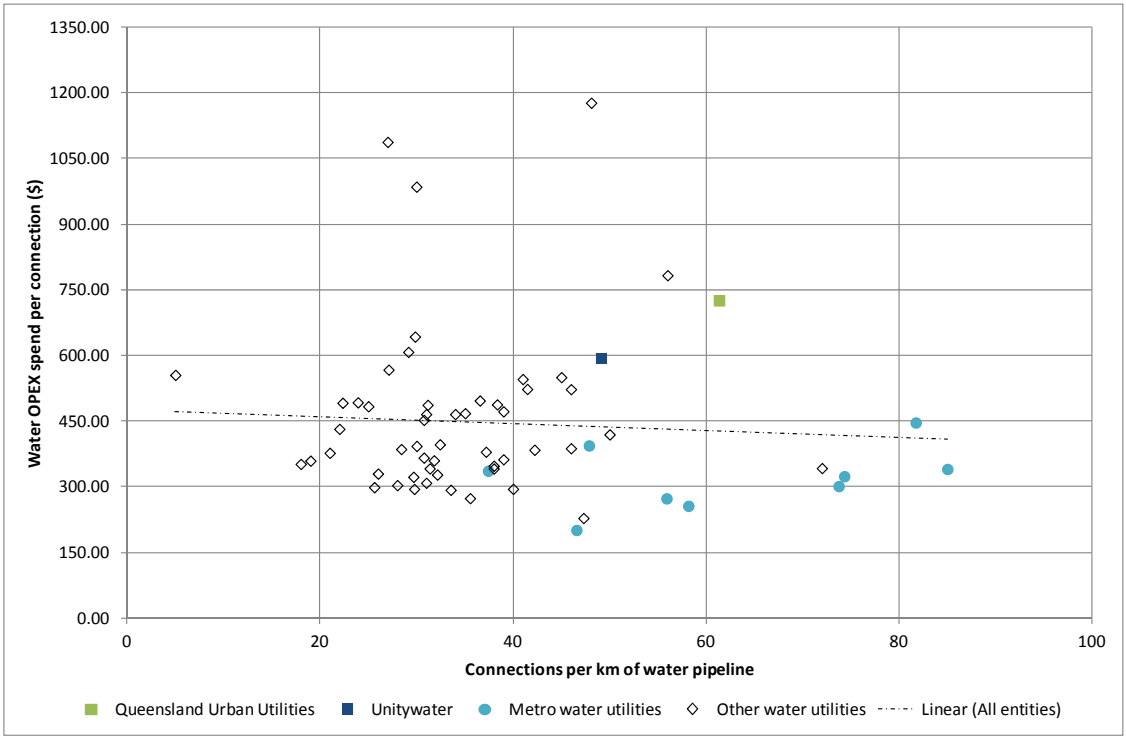
Metric Type	*Description*	*Unitywater ($)*	*QUU($)*	*Sydney Water Corporation ($)*	*Yarra Valley Water ($)*
Customers	Total costs per connection	910	1,016	486	809
	Water costs per connection	593	726	211	-
	Wastewater costs per connection	305	306	282	-
Network	Total costs per km of pipeline	23,730	30,001	19,778	29,022
	Water costs per km of pipeline	30,400	43,340	18,429	-
	Wastewater costs per km of pipeline	16,824	16,959	20,958	-
Volume	Total costs per ML of drinking water	4,277	4,091	2,046	4,132
	Water costs per ML of drinking water	2,787	2,921	890	-
	Wastewater costs per ML of drinking water	1,490	1,169	1,156	-

Note: Yarra Valley data sourced from its 2009-13 Water Plan which does not disaggregate operating costs by water and wastewater Source: QUU (2012) Unitywater (2012), SWC (2012), Yarra Valley (2009).

Based on these metrics, the Authority found that Unitywater's operating expenditure for water is consistent with QUU but higher than comparable water utilities in Australia. For wastewater services, Unitywater's costs were consistent with QUU and other water utilities.

The Authority notes that, in assessing the operating costs of water utilities around Australia, comparing expenditure per connection will tend to favour the larger utilities that have a large customer base or higher density of connections. Therefore, Unitywater's relative performance was measured using both expenditure per connection and the number of connections per km (see graphs below).

Figure 2.3: Water Operational Expenditure



Note: CPI has been applied to other utilities data to inflate the costs contained in the 2010-11 NWC Performance Report to 2012-13. Source: NWC (2012).

The Authority notes that this approach also supports a finding that Unitywater operating costs for water are higher than other water utilities in other jurisdictions. Bulk water costs account for around half of Unitywater's operational expenditure for water in 2012-13.

The Authority notes bulk water charges are not controllable by Unitywater and are higher than interstate peers (see table below). There is insufficient information publically available for rigorous benchmarking of water operating expenditure excluding bulk water costs to be undertaken, largely as a result of the different supply chains used interstate.

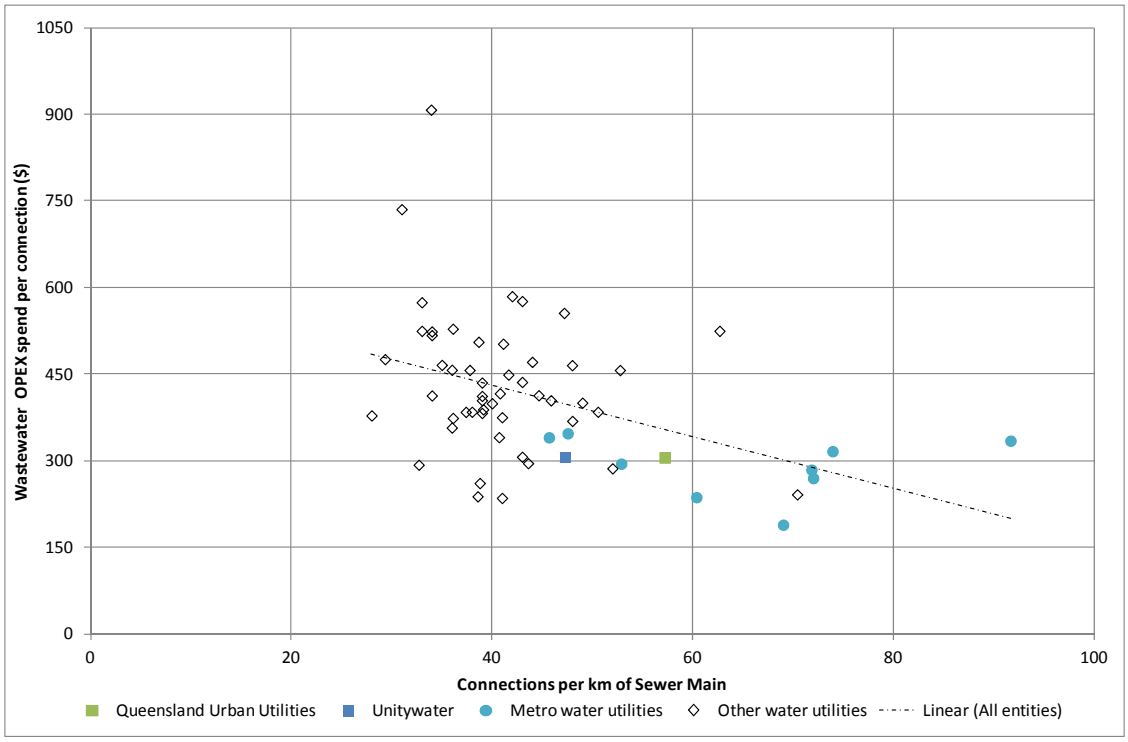
Table 2.70: Comparison of Bulk Water Costs for 2012-13

Water Utility/Area	*Bulk Water Cost ($/kl)*
Unitywater	
Moreton Bay	1.92
Sunshine Coast	1.34
Sydney Water Corporation	0.778[b]
City West Water	1.42[a]
South East Water	1.38[a]
Yarra Valley Water	1.44[a]

Note: a includes headworks and transfer costs per kl and fixed charges translated into a per kL basis using bulk water demand data for 2012-13 from the ESC b based on total Bulk Water expenditure inc Desal. Source: Sydney Water (2012), ESC (2009).

The Authority found Unitywater's wastewater costs to be generally consistent with similar sized water service providers (see Figure 2.4 below).

Figure 2.4: Wastewater Operational Expenditure



Note: CPI has been applied to other utilities data to inflate the costs contained in the 2010-11 NWC Performance Report to 2012-13. Source: NWC (2012).

In summary, the Authority notes that this high-level analysis shows Unitywater's operating costs for 2012-13 falls within a range of values bounded by other water utilities, and indicates the extent of operating efficiencies that could potentially be achieved.

Overall, Unitywater's operating costs for water appear higher than other utilities, although its operating costs for wastewater are comparable. This is a similar general finding as in previous years.

Sampled Costs

Halcrow selected a sample of operational expenditure for detailed review. The sample included the top 10% of operational expenditure by value in each activity and geographic area, over the forecast period. Halcrow reviewed employee costs, corporate costs, electricity, and other material and services costs.

In addition, the Authority has reviewed Unitywater's bulk water costs against forecast demand and the bulk water price path. The total sampled expenditure represents 89% of Unitywater's 2012-13 operating expenditure.

Table 2.71: Unitywater Operating Costs ($m)

Cost Centre	*2012-13*	*2013-14*	*2014-15*
Bulk water	114.94	141.20	167.64
Employee costs	50.44	53.12	55.51
Electricity	8.64	9.80	11.07
Corporate Costs	32.25	32.98	33.63
Other materials and services	22.54	23.75	24.89
Total Sample	**228.80**	**260.85**	**292.73**
Total Expenditure	**258.52**	**291.98**	**325.24**

Source: Unitywater (2012).

Bulk Water Cost

The Authority examined Unitywater's tariffs and noted that the bulk water tariffs charged to customers are consistent with the bulk water prices set by the Queensland Government. The Authority found that Unitywater's operating budget demonstrates that prices for bulk water storage, treatment and delivery are passed through to customers in full.

The review of Unitywater's demand forecasts for bulk water by SKM recommended adjustments to the volume of water sales forecast by Unitywater and made corresponding changes to bulk water purchases. The Authority has accepted SKM recommendations and has adjusted Unitywater's operating costs associated with the purchase of bulk water for 2012-13 (see below).

The Authority's adjustments result in a decrease in bulk water costs for water due to marginally lower estimates of demand.

Table 2.72: 2012-13 Bulk Water Costs

Geographic Area	*Unitywater Submitted Bulk Water Cost ($m)*	*Unitywater Submitted Demand (ML)*	*Revised SKM Demand (ML)*	*Unit Price ($/kL)*	*QCA Revised Bulk Water Cost ($m)*
Moreton Bay	66.35	30,270	30,712	2.1920	67.31
Sunshine Coast	48.59	30,177	29,266	1.6099	47.11
Unitywater	**114.94**	**60,448**			**114.41**

Note: Includes commercially negotiated customer demand. Source: SKM (2012), Unitywater (2012), Queensland Water Commission (2012).

Employee Costs

Unitywater has budgeted $50.44 million for employee costs in 2012-13 (excluding the costs of corporate employees as these are in the corporate costs category). This is a 1.5% decrease on the estimated actual expenditure in 2011-12 of $51.22 million.

Unitywater submitted that it forecast employee expenses based on growth and labour cost escalation of 4.3%, comprised of a wage escalation rate of 3.8% (as per the EBA) in addition to an allowance of 0.5% for salary progression (i.e. annual increment advancement) for existing employees.

Halcrow noted that of the 45 voluntary redundancies ($3.4 million), 36 related to operating expenditure ($2.5 million) with the remaining nine relating to capital expenditure ($0.8 million).

Wage Index

For the SunWater investigation (QCA 2012a), the Authority concluded that ABS labour price index data was an objective and authoritative source of information for the estimation of future labour cost movements. The Authority also considered that labour costs in Queensland were likely to rise by more than the general inflation rate because the continuation of strong growth in the resources sector would maintain upward pressure on labour costs.

The Authority's updated estimates of labour cost escalation, based on the latest 10-year period (March 2002-March 2012) of the ABS labour indexes used for the SunWater investigation, are set out in the table below[50].

Table 2.73: Labour Price Index - Compound Average Growth Rates

	Compound Average Annual Growth Rate (March 2002-March 2012)
All Industries (Queensland)	3.9%
Electricity, gas, water and waste services (Australia)	4.3%
Construction (Australia)	4.3%

Source: ABS (2012)

Halcrow noted that the Queensland Government adopted a wage price index forecast of 3.25% for 2012-13 in its 2012-13 budget. More recent information indicates a softening in the Queensland labour market such that a reduction in the Unitywater wage index going forward should be expected. Halcrow recommended that the Queensland Government forward estimates of 3.5% should be used to inform wage cost increases in 2013-14 and 2014-15.

The Authority considers that Unitywater's proposal to escalate its labour costs by 4.3% in 2012-13 is reasonable given the agreed EBA currently in place. For future years, the Authority considers that in view of the softening of the labour market a lower estimate should be negotiated. The Authority has accepted the Queensland Government forward estimate of 3.5% for 2013-14 and 2014-15 and notes this is consistent with its recent review of Seqwater irrigation prices, in which an average growth rate of 3.6% was applied over 1 July 2013 to 30 June 2017 (a longer forecasting period).

Benchmarking

Halcrow examined Unitywater employee expenses by volumes of water purchased and by wastewater serviced properties and found that they are decreasing, with:

[50] The Authority considers that a 10-year estimation period should be used in order to obtain a reasonable balance between short-term and long-run influences to arrive at a plausible basis for forecasting.

(a) employee expenses per kl falling by 7.6 % in 2012-13; and

(b) employee expenses per connection falling by 3.8% in 2012-13.

Halcrow also assessed water related employee expenses (by volume) and wastewater related employee expenses (by connections). This showed that Unitywater's employee expenses by unit of supply are decreasing while QUU's are increasing:

(a) Unitywater water-related employee expenses per kl decrease by 7.2% in 2012-13; wastewater-related employee expenses per connection decrease by 5.9%; and

(b) QUU's water-related employee expenses per kl increase by 21.6% in 2012-13; wastewater-related employee expenses per connection increase by 5.4%.

Unitywater's and QUU's employee costs per connection and water purchases are compared in the table below.

Table 2.74: Employee Costs Per Unit

	QUU	***Unitywater***
Employee Expenditure Water	41,958.60	17,764.10
Drinking Water Purchases (ML)	130,834	60,448
$/kL	**0.32**	**0.29**
Employee Expenditure Wastewater	47,065.70	26,708.50
Wastewater Properties Serviced (No)	500,650	295,188
$/property	**94.01**	**90.48**

Source: Halcrow (2012)

Based on this analysis, Halcrow considered that Unitywater's employee expenses are in the order of 5-10 % lower than QUU's.

However, Unitywater's figures exclude corporate employee expenses (these are included in corporate costs) whereas QUU's figures include corporate employee expenses. Relevant information has been sought from Unitywater and will be addressed in the analysis for the Authority's Final Report.

Opportunities for Additional Labour Efficiencies

Halcrow noted that opportunities for further efficiencies and the realisation of gains from earlier reform are not explicitly reflected in the 2012-13 and forward estimates. In supporting information provided to Halcrow, Unitywater conceded that 'further refinement of staff establishments will be required' and 'the organisational structure will evolve as Unitywater gains operational experience and management focus.'

Halcrow stated that the following extract from the business case for Unitywater's Consolidated Asset Management System provides an indication of the potential gains yet to be made in the Field Services Area:

> *"Wrench" time is the time that field crews spend actually "doing the job", as opposed to travel, getting ready to start, etc.*

The following table outlines typical water utility field staff time utilisation where processes and systems are "basic", "improved" and "best in class". Given Unitywater's history of being recently formed from the water businesses of a number of councils, it is anticipated that it is much closer to "basic" than "best in class.

Table 2.75: Field Staff Utilisation Rates

Activity	*Basic*	*Improved*	*Best in Class*
Personal	5%	5%	5%
Break & Lunch	19%	19%	19%
Idle Time	6%	3%	0%
Getting Parts	17%	8%	1%
Getting Tools	4%	2%	1%
Travel Time	13%	10%	5%
Instructions	6%	3%	1%
Wrench Time	30%	50%	68%

Source: Unitywater (2012)

Based on this information, Halcrow noted that a move from 'Basic' to 'Improved' field practices could yield productivity gains of approximately 15% (1.50/1.30). This implies a reduction of $3.84 million (based on its 2012-13 budget of $25.6 million). Further gains, in the order of 12%, could then be expected with a further move to 'Best in Class'.

Halcrow recognised that redundancies to date have accounted for an effective efficiency gain in the order of 2.5-3.0% in 2011-12 (reduction by 18FTE to 640.5FTE in Infrastructure Services), with forecast reductions during 2012-13 accounting for a further 6% (640.5FTE to 602FTE).

Taking these into account, Halcrow proposed a reduction of 5% in the field services employee budget for 2012-13 ($25.6 million), which amounts to $1.28 million or 2.5% of forecast total employee expenses. Halcrow noted this does not account for further efficiencies in the Treatment Plants Division which is also expected to be realising gains.

Halcrow submitted that additional gains, potentially in the order of 5% per annum (of relevant budget components), would then be expected as field practices yield further productivity increases over the subsequent 2-3 years.

Conclusion

Unitywater has commenced major initiatives to reform its workforce practices. Despite these reforms, Unitywater is an organisation in transition and current employee expenses are above the level that can be expected once reforms are complete. Halcrow found that staff and contractor rationalisation can be expected following the completion of Project Paramount.

Taking into consideration the reforms to date, Halcrow proposed a reduction of 5% to the Field Services employee budget for 2012-13 ($25.6 million), of $1.28 million to reflect improved efficiency.

The Authority has adopted Halcrow's proposed adjustments. In addition, the Authority has applied a 5% per annum reduction to field services employee costs in 2013-14 and 2014-15 to reflect the further productivity increases achieved as Unitywater moves towards best in class practices.

Table 2.76: Revised Labour Costs ($m)

	2012-13	*2013-14*	*2014-15*
Water	21.3	21.4	21.6
Wastewater	27.9	28.2	28.4
QCA Total	**49.2**	**49.6**	**50.1**
Unitywater Submitted	50.4	53.1	55.5
Variance	-1.3	-3.5	-5.5

Source: QCA calculations.

Corporate Costs

In its Information Requirements for 2012-13, the Authority defined corporate cost as general corporate expenditure that cannot be readily allocated to other cost types.

Unitywater's corporate costs are $32.25 million in 2012-13. This is a $1.44 million reduction on 2011-12 costs of $33.69 million. In estimating 2012-13 costs Unitywater applied an escalation rate of 3.25% with no growth in business as usual costs.

Corporate Cost Increases

Unitywater provided a breakdown of the major items in corporate costs (see table below).

Unitywater noted that significant differences in the 2012-13 costs to the estimated actual costs for 2011-12 were as a result of a number of reclassifications occurring between major line items comprising corporate costs. The changes were made to better reflect the underlying nature of the transactions being captured and to focus attention on and monitor key corporate cost drivers. These reclassifications, while not uncommon in the early years of any new business, complicate direct comparisons of line items.

Table 2.77: Unitywater Corporate Cost – Major Items by Natural Account ($m)

Cost Item	*Actual 2010-11 (1)*	*Estimated Actual 2011-12 (2)*	*Budget 2012-13 (3)*	*Difference (Col 3-2)*
Accounting/Admin/Business	6.19	4.82	8.61	3.78
Communications and Marketing	2.32	1.97	1.93	-0.03
Consolidations	-	-	-9.12	-9.12
Corporate Finance	6.07	11.48	0.94	-10.54
ICT	9.04	5.15	4.76	-0.39
Legal	0.77	1.26	1.55	0.29
Office of the CEO	1.23	1.04	1.55	0.52
Plant & Fleet	-2.54	-4.44	4.95	9.38
Procurement	2.17	0.46	0.53	0.07
Property Management	3.31	1.92	2.74	0.82
Regulatory Affairs	1.02	1.14	1.30	0.17
Revenue Assurance	-	-	1.71	1.71
Risk	0.18	0.49	2.71	2.23
Workforce Capability etc	3.55	4.80	5.00	0.20
Total	**33.30**	**30.08**	**29.16**	**-0.92**

Note: Does not include all corporate costs of $32.25m in 2012-13. Source: Unitywater (2012).

Halcrow noted that Unitywater's corporate expenditure is relatively constant at the aggregate level.

However, Halcrow noted underlying significant increases in corporate costs in 2011-12 that were offset by a change in capitalisation policy that reduced expensed corporate costs by $10 million in that year. Halcrow noted that these underlying increases are being carried forward to future years.

Halcrow stated that the increases are likely to relate to system and organisational change captured in Program Paramount as the organisation transitions from separate council administered systems to a unified, sustainable organisation with improved management and maintenance regimes.

Halcrow noted that Unitywater's 3.25% cost indexation is more than Queensland Treasury's forecast in early 2012 of CPI at 2.75% for 2012-13, 2013-14 and 2014-15, although consistent with the Reserve Bank of Australia forecast of 3.25 % for 2012-13 and between 2-3% thereafter. Halcrow also noted that Unitywater's cost indexation is up to 1% higher than QUU's forecast 2.5% rate of escalation for the same items.

Given the latest Reserve Bank forecast, Halcrow concluded that it is reasonable to escalate other materials and services by 3.25% in 2012-13. However, Halcrow recommended that the

escalation rates in 2013-14 and 2014-15 be reduced to 2.5%, reflecting the slowing economic conditions and to be consistent with the Reserve Bank's forecasts of general inflation.

Benchmarking

Halcrow benchmarked Unitywater's corporate costs under a range of approaches, noting that this task is complicated by the differing organisational structures of comparator firms and definitions of corporate costs.

Halcrow noted that in past submissions to the Authority, Unitywater relied on a NSW Government paper in support of its corporate costs:

> *Advice on corporate overheads was sourced from the Council on the Cost and Quality of Government (CCQG), now known as the Performance Improvement Branch, Department of the Premier and Cabinet, New South Wales government. For agencies of greater than 350 full time equivalent employees CCQG have benchmarked corporate overheads at between 10 and 12% of overall operating costs.*

Halcrow found that Unitywater's corporate costs are 12.5% of total operating expenditure (including bulk water), marginally higher than the CCQG benchmark of 10-12%. However, if bulk water costs are excluded, Unitywater corporate costs are 22.5% of operating expenditure.

Halcrow compared Unitywater's and Sydney Water's corporate costs for 2012-13 (excluding bulk water) to the CCQG benchmark. Halcrow noted that Sydney Water's corporate costs were 13.5% of total operating expenditure (excluding bulk water and desalination) compared with the CCQG benchmark of 10-12%. Halcrow noted the consultant engaged by IPART to review Sydney Water's operating expenditure concluded that the level of corporate costs was marginally high when compared to an efficient company and there are opportunities for further efficiencies[51].

Unitywater's corporate costs (22.5%) significantly exceed Sydney Water's corporate costs (13.5%), as a percentage of operating costs excluding bulk water.

Table 2.78: Corporate Costs compared to Total Operating Expenditure

Unitywater			***Sydney Water***		
Description	***$million***	***% of total opex***	***Description***	***$million***	***% of total opex***
Corporate	32.25	22.5	Corporate	119.8	13.5
Total Operating Expenditure	143.58		Total Operating Expenditure	887.5	

Note: Total operating expenditure excludes the cost of bulk water, and for Sydney Water, the cost of desalinated water. The costs of redundancies and finance lease payments are excluded from Sydney Water's corporate costs to make them more comparable to Unitywater's corporate cost figures. Source: Halcrow (2012).

Halcrow also benchmarked the ratio of corporate cost to employees, connections and revenues. Halcrow noted that such ratios are affected by a range of factors including the relative reliance on contractors compared to internal staff, customer mix and the governance arrangements and price constraints existing in the different jurisdictions.

[51] The Authority notes that in doing so Halcrow has sought to validate the results from its application of the CCQG benchmark (10-12% of operating costs, excluding bulk costs) by using a different benchmark (an efficient company). The consistency in results strengthens the relevance of the CCQG benchmark as applied to operating costs excluding bulk water. IPART's consultants recommended efficiency gains for Sydney Water.

Table 2.79: Corporate Cost Ratios Benchmarking

Water Company	*$'000/FTE*	*$/customer connection*	*$/revenue*
Unitywater	38.6	122.1	66.6
QUU	52.9	123.8	69.9
Sydney Water	39.5	66.8	53.0
Victorian water retailer/distributor (1)	109.6	80.5	77.0
Victorian water retailer/distributor (2)	89.5	62.5	78.5
Victorian water retailer/distributor (3)	64.7	35.0	43.2

Note: Figures for QUU and Unitywater sourced from their respective Interim Price Monitoring Information Return/Submission. Figures for Sydney Water sourced from the expenditure review consultant's report. Figures for Victorian water companies escalated from figures presented in the QCA's 2011-12 Interim Price Monitoring Report. Source: Halcrow (2012).

Halcrow considered that the key ratio is that of corporate costs to customer numbers. This shows most clearly the impact of the level of corporate costs on customers' bills. While the ratio for Unitywater is comparable with QUU, it is double the figure for most interstate comparators.

Conclusion

On the basis of its analysis, Halcrow questioned the efficiency of Unitywater's corporate costs. Using the 10-12% benchmark of the CCQG as a guide, Halcrow estimated the efficient level of corporate costs for business as usual activity in the range of $15 million to $17 million. This leaves around $15 million to $17 million accounted for by one-off separation expenditures and/or inefficiencies.

Halcrow noted that Unitywater nominated $6.3 million as non-recurrent costs in 2012-13. However, Halcrow considered it likely, based on the information provided, that the transition expenditure in 2012-13 exceeds this amount.

Taking into account the results of its benchmarking and given the inherent difficulties in comparing corporate cost across entities, Halcrow concluded that 25% of the additional expenditure ($10 million) offsetting the increased capitalised expense is inefficient.

Therefore, Halcrow recommended a reduction of $2.5 million to 2012-13 corporate costs, reducing regulated corporate expense to $29.7 million.

Halcrow also recommended that the price escalation rates in 2013-14 and 2014-15 be reduced to 2.5%, as noted above, reflecting slowing economic conditions and for consistency with the Reserve Bank's forecast of general inflation.

The Authority has accepted Halcrow's findings and has adjusted accordingly.

Table 2.80: Unitywater Corporate Costs ($m)

	2012-13	*2013-14*	*2014-15*
QCA Water	12.5	12.8	12.8
QCA Wastewater	17.3	17.7	17.8
QCA Total	**29.7**	**30.5**	**30.6**
Unitywater Total	**32.2**	**33.0**	**33.6**
Variance	-2.5	-2.5	-3.0

Electricity Costs

Unitywater budgeted electricity costs of $8.64 million in 2012-13, a 36.1% increase on costs of $6.35 million in 2011-12.

Unitywater purchases electricity via a single contract which expires in June 2013. Unitywater's estimates of the cost of electricity in 2012-13 are built up using price and growth indices and include the cost of carbon, as follows:

(a) escalation rate of 19.5%, based on:

  (i) an increase of 10% for carbon tax related charges (100% applied);

  (ii) an increase of 18% in network charges based on advice from Energex (45% weighting applied); and

  (iii) a 2.5% increase in the retail component as per its contract (55% weighting applied); and

(b) flow rates were assessed on a site-by-site basis and from these growth rates were applied. It was also considered that wastewater treatment plant upgrades would contribute to an increase in electricity use due to additional monitoring requirements, higher than average flow rates, and enhanced use of environmental protection equipment during planned upgrades.

For 2013-14 and 2014-15, Unitywater applied a price escalator of 11.4%.

Halcrow noted that prior to entering into its electricity contract for 2012-13, Unitywater engaged an external consultant to evaluate the electricity tenders received. Halcrow found that Unitywater did not follow the advice of this consultant noting that both supplier selected and term of the contract vary from the consultant's recommendation. Halcrow has not sighted an explanation for the reasons for the departure from the recommendation.

Based on the consultant's report, the cost of the selected tender was 2.2% higher than the recommended tender. In the absence of any documentation or justification as to why the least cost tender was not chosen the Authority has reduced electricity costs for the additional cost involved (2.2%).

Halcrow noted that Unitywater has not provided evidence that it has taken further action, similar to QUU, to curtail its electricity costs. Such actions may include:

(a) either in-house or through an external service provider to verify its monthly accounts for accuracy in billing to ensure:

  (i) there are no overlaps between bills;

  (ii) the correct electricity charges are applied; and

  (iii) there are no unexplained variations in electricity demand; and

  (iv) identify demand spikes and opportunities for improved load management;

(b) reducing peak demand by pumping drinking water to reservoirs at night (off peak);

(c) investigating constructing co-generation plants at its main sewage treatment plants;

(d) implementing smart-metering to give operators real-time visibility of energy usage to manage demand;

(e) conducting a fully energy audit on top treatment sites; and

(f) upgrading monitoring and control technology to enable automatic system optimisation, or operators to manage processes more effectively thereby reducing costs.

On the drivers of energy use, Halcrow advised that the volume of water provides a direct link to water pumped and energy use. Actual increases in pumping will depend on where additional demand is realised. Therefore, Halcrow concluded that the growth in electricity usage for water activities should be based on the growth in bulk water volumes.

For sewerage activities, Halcrow noted that sewage flows are influenced by a range of factors including water flows and storm water infiltration. Growth in water usage will not have a corresponding growth in sewage flows, as a proportion will relate to non-sewage uses such as garden watering or car washing. Growth in electricity usage for wastewater activities should therefore be based on the growth in connections.

The Authority has accepted Halcrow's advice on the drivers of growth in energy use for water (bulk water) and wastewater (connections). Halcrow recommended that an additional growth allowance be made for increased consumption as outlined by Unitywater. Overall, Halcrow recommended lower growth in electricity usage resulting in a reduction of $0.72 million in 2012-13 electricity costs.

The Authority notes that for 2013-14 and 2014-15, Unitywater applied a price escalator of 11.4%. Unitywater has not provided any information in support of this index. The Authority notes that for 2013-14 and 2014-15, QUU applied the SKM/MMA indices of 4.85% and 10.32% respectively (inclusive of the impact of carbon). The Authority found these forecasts to be reasonable for QUU. In the absence of a detailed justification for Unitywater use of higher rates, the Authority has applied the SKM/MMA increases to Unitywater's electricity cost for 2013-14 and 2014-15.

In summary, the Authority has adjusted for a 2.2% reduction in electricity costs (to reflect the lowest cost provider) and for the drivers of energy usage (a further $0.72 million reduction). This reduces Unitywater's forecast electricity costs in 2012-13.

Table 2.81: Revised Unitywater Electricity Costs ($m)

	2012-13	*2013-14*	*2014-15*
Water	1.4	1.5	1.7
Wastewater	6.3	6.9	7.4
QCA Total	**7.7**	**8.4**	**9.1**
Unitywater Proposed Total	**8.6**	**9.8**	**11.1**
Variance	-0.9	-1.4	-1.9

Source: QCA (2012), Unitywater (2012).

Other Material and Services

Other materials and services are defined as all other operating expenditure accounts not already included in the previous operating expenditure categories. As such, this cost category encompasses a broad range of costs.

Unitywater proposed a total expenditure on other materials and services of $22.53 million in 2012-13. This is an increase of 43.0% on 2011-12 expenditure of $15.77 million, which is 8.4% above 2010-11 expenditure of $14.54 million.

Halcrow noted that increases in other materials and services varied greatly between geographic areas. For example other materials and services expenses incurred in providing services to Moreton Bay increase by 37.0% while the equivalent figure for the Sunshine Coast is an increase of 49.6%. The increase in the water associated expenses on the Sunshine Coast is more than double the increase for Moreton Bay.

Halcrow noted that there are many items that make-up other materials and services and annual variations. One area of significant increases was Unitywater's expenditure on consultants across various sectors of the business including;

(a) business development – $3 million on consultants (other), an increase of $2.9 million on 2011-12;

(b) ICT – $1 million on consultants (other), an increase of $0.9 million; and

(c) strategic planning – $3.8 million on consultants (engineering), an increase of $1.4 million.

Halcrow noted that the additional expenditure in respect of consultants may in part reflect a reallocation of $3.6 million to other materials and services. Other large variations identified by Halcrow include:

(a) ICT – $2.1 million on software and hardware licences, an increase of $0.6 million;

(b) business support services – $2.8 million on building lease expense, an increase of $0.8 million; and

(c) field services – $2.5 million on repairs and maintenance, an increase of $2.5 million.

Unitywater adopted price escalation rates of 3.25% in 2012-13, 3.5% in 2013-14 and 3.4% in 2014-15. As noted previously, Halcrow considered that given the Queensland Treasury forecast (2.75 %) and RBA forecast (3.25%) in early 2012, it is reasonable to adopt a price escalation rate of 3.25% for other materials and services in 2012-13. However, Halcrow recommended that the price escalation in 2013-14 and 2014-15 be reduced to 2.5%, reflecting the slowing economic conditions and to be consistent with Queensland Treasury's and the latest Reserve Bank's forecasts of general inflation for these years.

Halcrow reviewed Unitywater's other materials and services budgetary processes and found that the processes demonstrated that budget constraints are applied and how work priorities are assigned. However, they found that Unitywater has not linked these process improvements to the cost classifications adopted by the Authority.

As a result, Halcrow concluded that Unitywater has not explained the large increase in expenditure on Other Materials and Services in 2012-13. Halcrow noted that specific increases by service and region need to be linked to legal requirements, service standards and business sustainability.

Halcrow considered that a downwards adjustment should be made to other materials and services expenses in 2012-13 on the basis that Unitywater's proposed increase relative to 2011-12 was unsubstantiated.

Based on Unitywater's escalation rate of 3.25% and allowing a further margin of 1.75% to account for unidentified items, a net increase of 5% relative to 2011-12 expenditure was proposed by Halcrow. Allowing for a reallocation of $3.6 million of contractors expenses to other material and services, Halcrow recommended costs of $20.34 million in 2012-13 (($15.77 million + $3.6 million) x 1.05). This equates to a reduction of $2.20 million to Unitywater's other materials and services expenditure.

The Authority has accepted Halcrow's recommended adjustments to Unitywater's proposed costs.

Table 2.82: Revised Unitywater Other Materials and Services Costs ($m)

	2012-13	*2013-14*	*2014-15*
QCA Water	8.6	8.9	9.4
QCA Wastewater	11.7	12.0	12.7
QCA Total	**20.3**	**20.8**	**22.1**
Unitywater Total	**22.5**	**23.8**	**24.9**
Variance	-2.2	-2.9	-2.8

Source: Halcrow (2012), QCA (2012).

Efficiency Gains

In its 2010-11 Final Report, the Authority noted that its analysis indicated there was scope for further efficiency gains. It also noted that economic regulators in other jurisdictions have applied annual efficiency gains to water retail businesses of up to 3.5%. Accordingly, the Authority set Unitywater a 2% annually compounding efficiency target, consistent with those imposed on other entities.

The Authority has reviewed the costs proposed by Unitywater in its 2012-13 price monitoring submission against these high level general targets.

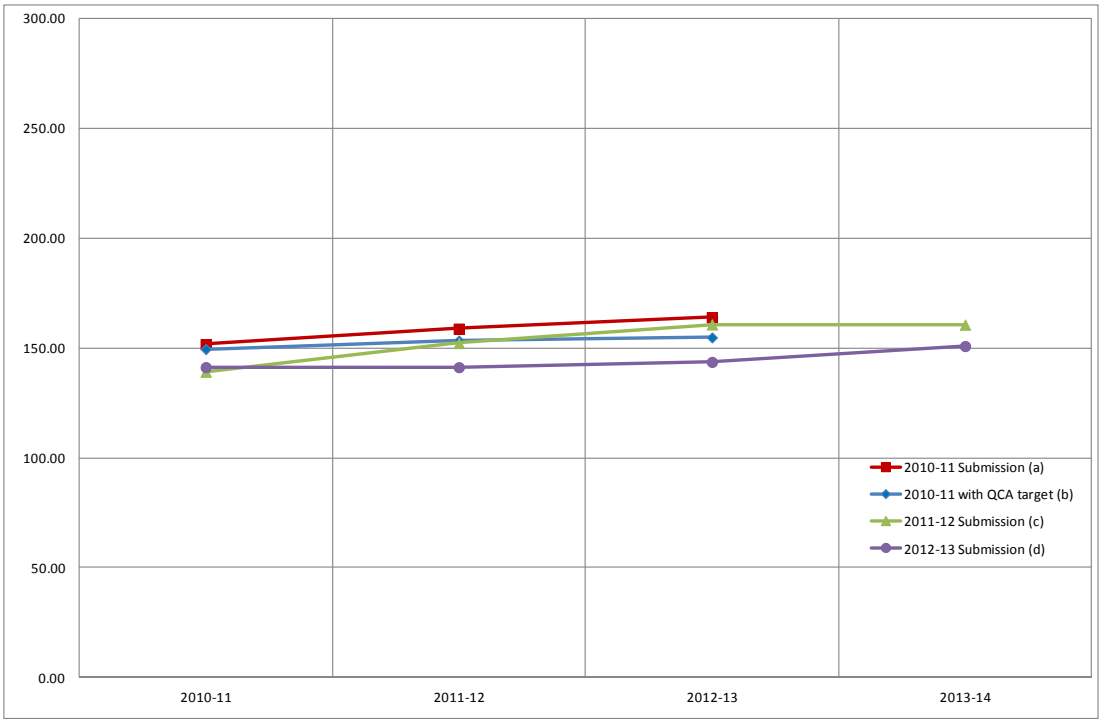
The Authority notes that Unitywater's 2012-13 total non-bulk operational expenditure of $143.58 million is $11.16 million (7.21%) below the target set by the Authority in its 2010-11 report.

Table 2.83: Unitywater Non Bulk Expenditure 2010-11, 2011-12 and 2012-13 Submission ($m)

Forecasts	*2010-11*	*2011-12*	*2012-13*	*2013-14*
2010-11 Submission (a)	151.64	158.72	163.85	n/a
2010-11 with QCA target (b)	149.41	153.30	154.73	n/a
2011-12 Submission (c)	139.12	152.14	160.65	160.53
2012-13 Submission (d)	141.19	141.18	143.58	150.78
(d) – (b) $m	-8.22	-12.12	-11.16	n/a
(d) – (b) (%)	-5.5%	-7.9%	-7.2%	n/a

Source: Unitywater (2012, 2011 and 2010), QCA (2011).

Figure 2.5: Unitywater Non Bulk Expenditure 2010-11, 2011-12 and 2012-13 Submission ($m)



Source: Unitywater (2012, 2011 and 2010), QCA (2011).

An analysis of operating costs per customer allows for the increase in operating costs due to the growth in connections to be taken into account. An analysis of Unitywater of non-bulk operational expenditure per customer (see table below), shows that operating costs per

connection have decreased and are slightly below (-0.67%) that originally considered to be prudent and efficient in 2010-11. Costs per ML have also decreased by 8.78%.

Table 2.84: Unitywater Non Bulk Opex per Connection

	2012-13 Non Bulk Cost ($m)	*2012-13 Water Connections**	*Total Water Demand ML*	*Cost per Connection ($)*	*Cost per ML ($)*
2010-11 Submission (a)	163.85	301,155	58,981	544.07	2,778.01
2010-11 With QCA Target (b)	154.73	303,937	59,424	509.09	2,603.83
2011-12 Submission (c)	160.65	306,179	53,539	524.69	3,000.62
2012-13 Submission (d)	143.58	283,940	60,448	505.67	2,375.26
Variance (d)-(b) $m	**-11.15**	**-19,997**	**1024**	**-3.42**	**-228.57**
Variance (d)-(b) %	**-7.21%**	**6.58%**	**-1.72%**	**-0.67%**	**-8.78%**

Note: Unitywater changed its method for the estimation of connections in 2012-13. Source: Unitywater (2012, 2011 and 2010), QCA (2011).

Halcrow examined Unitywater performance against the Authority savings targets for 2011-12 and 2012-13 (see table below). Halcrow found that Unitywater has achieved the efficiency targets set down by the Authority.

As a result, the Authority has not made any further reductions to Unitywater's non-bulk operational expenditure in 2012-13.

Table 2.85: Efficiency Gains – Unitywater (proposed) and QCA (previous forecast)

Item	*2011-12*	*2012-13*
Unitywater reported Regulated Operating Expenditure	233.67	258.52
less Bulk Water Costs	-92.49	-114.94
Unitywater reported Regulated Operating Expenditure (excl Bulk Water) **(a)**	141.18	143.58
QCA defined target for efficient operating expenditure	247.67	267.73
Less Bulk Water allowance	-94.37	-113.00
QCA defined target (excl Bulk Water) (b)	**153.3**	**154.73**
Variance ($) – actual less target, or (a) – (b)	**-12.12**	**-11.15**
Variance (%) – actual less target, or (a) – (b)	**-7.91%**	**-7.21%**

Source: Halcrow (2012)

Summary

The Authority has reduced Unitywater' estimates of operating costs for:

(a) bulk water, to reflect changes to demand;

(b) electricity, to reflect the advice from Halcrow on the appropriate drivers of energy use and for efficiencies in the contracted costs;

(c) employee expenses to reflect savings that can be expected in improved field services practices;

(d) corporate costs, based on a range of benchmarks that indicate corporate costs are above efficient levels; and

(e) other materials and services, to reflect Halcrow's view on a more appropriate level of increase in these costs as part of the proposed increases were unsubstantiated.

This results in a net adjustment of $7.42 million to operating costs in 2012-13, or 5.2% of non-bulk operating costs.

The Authority supports Unitywater's ongoing pursuit of operating efficiencies and considers that Unitywater should continue to seek operational efficiencies in 2012-13 and beyond as it achieves economies of scale and greater integration.

The Authority's operating expenditure for Unitywater over the price monitoring period for water and wastewater over are outlined in the tables below.

Table 2.86: Revised Water Operating Costs - 2011-12 to 2014-15 ($m)

	2011-12	*2011-12*	*2012-13*	*2013-14*	*2014-15*
Bulk water costs	90.71	94.88	114.41	134.98	156.99
Employee expenses	23.19	21.27	21.25	21.44	21.64
Contractor expenses	7.05	5.13	2.92	3.03	3.16
GSL Payments	0.00	0.00	0.00	0.00	0.00
Electricity charges	1.25	1.08	1.42	1.55	1.68
Sludge handling costs	0.00	0.00	0.00	0.00	0.00
Chemicals costs	0.86	0.60	0.51	0.55	0.59
Other materials and services (not relating to capital expenditure)	6.93	6.17	8.64	8.86	9.38
Licence or regulatory fees	0.13	0.09	0.13	0.14	0.14
Corporate Costs	15.58	14.03	12.48	12.79	12.84
Non recurrent costs	4.13	3.49	2.83	3.16	3.67
Indirect taxes	0.00	0.13	0.63	0.61	0.61
QCA Total Operating Costs	**149.83**	**146.88**	**165.24**	**187.12**	**210.69**
Unitywater Proposed Total	**142.69**	**144.49**	**168.47**	**196.84**	**226.22**
Variance	7.14	2.39	(3.23)	(9.72)	(15.53)

Source: QCA (2012 and 2011).

Table 2.87: Revised Wastewater Operating Costs - 2011-15 ($m)

	2011-12	*2011-12*	*2012-13*	*2013-14*	*2014-15*
Bulk water costs	0.00	0.00	0.00	0.00	0.00
Employee expenses	34.61	29.95	27.90	28.15	28.41
Contractor expenses	11.61	11.72	10.39	10.88	11.34
GSL Payments	0.00	0.00	0.00	0.00	0.00
Electricity charges	6.18	5.27	6.31	6.86	7.44
Sludge handling costs	4.64	4.28	4.11	4.34	4.56
Chemicals costs	4.40	3.15	3.59	3.85	4.12
Other materials and services (not relating to capital expenditure)	11.38	9.60	11.70	11.99	12.69
Licence or regulatory fees	0.28	0.28	0.26	0.27	0.29
Corporate Costs	16.11	19.66	17.27	17.70	17.76
Non recurrent costs	5.14	5.08	3.40	3.28	2.99
Indirect taxes	0.00	0.19	0.94	1.00	1.05
QCA Total Operating Costs	**94.35**	**89.18**	**85.86**	**88.33**	**90.64**
Unitywater Proposed Total	**93.18**	**89.18**	**90.04**	**95.15**	**99.02**
Variance	1.17	0.00	(4.18)	(6.82)	(8.38)

Source: QCA (2012 and 2011).

Table 2.88: Comparison of Unitywater and Authority's Operating Costs ($m)

	2011-12	*2011-12*	*2012-13*	*2013-14*	*2014-15*
Unitywater forecast	235.87	233.67	258.52	291.98	325.24
QCA forecast	244.19	236.06	251.10	275.45	301.33
Difference	8.32	2.39	(7.42)	(16.53)	(23.91)

Source: Unitywater (2011) and QCA calculations.

The Authority has reduced Unitywater' estimates of operating costs for:

(a) bulk water, to reflect changes to demand;

(b) electricity, to reflect the advice from Halcrow on the appropriate drivers of energy use and for efficiencies in the contracted costs;

(c) employee expenses to reflect savings that can be expected in improved field services practices;

(d) corporate costs, based on a range of benchmarks that indicate corporate costs are above efficient levels; and

(e) other materials and services, to reflect Halcrow's view on a more appropriate level of increase in these costs.

This results in a net adjustment of $7.42 million to operating costs in 2012-13, or 5.2% of non-bulk operating costs.

The Authority supports Unitywater's ongoing pursuit of operating efficiencies and considers that Unitywater should continue to seek operational efficiencies in 2012-13 and beyond as it achieves economies of scale and greater integration.

2.11 Total Costs

The Ministerial Direction requires the Authority to monitor the entities' revenues with regard to the Authority's assessed MAR, which is based on the total costs of carrying on the activity.

Total costs identified earlier have not been adjusted for any revenue offsets required to calculate the MAR and include:

(a) operating and maintenance costs, including tax;

(b) return on capital; and

(c) return of capital, allowing for depreciation of assets over time.

Unitywater's Submission

Unitywater identified its estimate of total prudent and efficient costs for water and wastewater for 2011-12 and 2012-13 on a single year or 'unsmoothed' basis.

Unitywater submitted that the existing regulatory framework does not recognise income tax payable by Unitywater on receipted cash contributions for infrastructure. To address this omission, Unitywater proposed to calculate tax costs associated with cash contributions received (for local government Tax Equivalent Regime (TER) purposes gifted assets are excluded from taxable income) and reduce the MAR by the value of gifted assets and cash contributions receipted into Unitywater net of the unfunded tax on receipt of those contributions.

Following discussions, Unitywater clarified its concern that the general customer base is funding the tax cost associated with unallocated cash contributions, rather than the developer. Unitywater stated that the infrastructure charging regime only permits inclusion of the costs to construct, not costs such as tax on cash contributions.

Unitywater proposed that its concern could be resolved by either:

(a) changing the infrastructure charges calculation methodology to gross up cash contributions to reflect the tax liability;

(b) making cash capital contributions tax exempt as per the treatment for donated assets; or

(c) reducing the capital contributions deducted from total costs to acknowledge the tax consequence [a lower amount should be deducted from total costs resulting in a higher MAR].

Unitywater acknowledged that the first two options above are outside of the Authority's control.

Table 2.89: Unitywater Total Costs ($m)

	Unitywater Water Costs 2011-12	*%*	*Unitywater Wastewater Costs 2011-12*	*%*	*Unitywater Water Costs 2012-13*	*%*	*Unitywater Wastewater Costs 2012-13*	*%*
Bulk Water Costs	83.73	29.71%			114.94	37.0%		
Distribution and Retail Costs								
Other operating costs	58.96	20.92%	93.18	30.05%	53.54	17.2%	90.04	28.8%
plus Tax	0.05	0.02%	0.04	0.01%	0.13	0.0%	0.09	0.0%
plus Return on Capital	102.50	36.37%	158.05	50.96%	108.55	34.9%	167.17	53.5%
plus Return of Capital	36.58	12.98%	58.85	18.98%	33.50	10.8%	55.27	17.7%
Total Costs	**281.82**	**100%**	**310.12**	**100%**	**310.66**	**100%**	**312.58**	**100%**

Notes: 2012-13 data sourced from Unitywater's information template and supporting information. Source: Unitywater (2012), Unitywater (2011).

Authority's Analysis

On the basis of the Authority's analysis of the RAB, asset lives, cost of capital and operating and maintenance costs, the Authority calculated the total costs of carrying on Unitywater's water and wastewater activities for 2012-13.

In doing so, and as for 2011-12, the Authority calculated single year or 'unsmoothed' estimates, to allow for comparison with Unitywater's revenues and costs, which were set on this basis.

For water, the Authority's estimate of total costs was slightly higher than Unitywater's estimate. For wastewater, the Authority estimate is lower than Unitywater's. Overall, the Authority's total costs are lower than Unitywater's by $7.91 million or 1%.

The differences between Unitywater's submitted costs for 2012-13 and the Authority's arise from:

(a) bulk water costs – the Authority had slightly lower bulk water cost estimates due to the Authority's lower demand estimates based on low population growth;

(b) other operating costs – the Authority had lower estimates of other distribution and retail costs due to adjustments to electricity, employee expenses, corporate costs and materials and services;

(c) tax – the Authority's estimates are higher than Unitywater's estimates. In relation to Unitywater's proposal in relation to tax payable on cash contributions, the Authority notes that its approach is based on the Local Government TER[52].

In response to Unitywater's concerns regarding tax on unallocated cash contributions, the Authority considers that its tax calculation and treatment of capital contributions is appropriate. The Authority has included a tax allowance in its total costs that fully compensates Unitywater for the tax payable on unallocated cash contributions. The Authority has deducted the cash contributions from total costs as per the revenue offset approach to calculating the MAR (section 2.13);

(d) the return on capital – the Authority's estimate is marginally higher than Unitywater's; and

(e) the return of capital – the Authority's estimate for wastewater is materially lower than Unitywater's and will be investigated further for the Final Report, as the difference cannot be explained by the difference in the RAB. Unitywater calculates depreciation using individual asset lives (see section 2.8). The Authority notes that the use of a weighted asset life (as provided by Unitywater in its information return) should have the same depreciation result if the weighting is appropriate.

[52] The Authority was previously advised by the Tax Assessor that the tax treatment of contributed assets and cash under Local Government Income Tax Equivalent Ruling LITER 98/20 is as follows:
(a) contributed, donated and gifted assets (physical assets): not assessable and not deductible;
(b) cash contributions that are allocated to particular assets or asset classes: not assessable and not deductible;
(c) cash contributions that are not allocated to particular assets or asset classes: assessable at time of recept and deductible through depreciation when subsequent assets acquired.

Table 2.90: Comparison of Unitywater and QCA Costs for 2012-13 ($m)

	Water Unitywater Costs	*Water QCA Costs*	*QCA % of total*	*Wastewater Unitywater Costs*	*Wastewater QCA Costs*	*QCA % of total*
Bulk Water Costs	114.94	114.41	36.8%			
Distribution and Retail Costs						
Other operating costs	53.54	50.83	16.4%	90.04	85.86	28.2%
+ Tax	0.13	0.84	0.3%	0.09	2.90	1.0%
+ Return on Capital	108.55	109.74	35.3%	167.17	169.32	55.6%
+ Return of Capital	33.50	34.98	11.3%	55.27	46.46	15.3%
Total Costs	**310.66**	**310.80**	**100%**	**312.58**	**304.53**	**100%**

Source: Unitywater (2012) and QCA calculations.

2.12 Revenues for 2012-13

For price monitoring purposes, Unitywater's revenues as forecast at the time of price setting form the relevant forecast revenues. These revenue forecasts for 2012-13 are consistent with 2012-13 prices.

Unitywater's submission

Unitywater's revenue forecasts for water and wastewater (as at the time of price setting) are shown in the table below.

Table 2.91: Unitywater's 2012-13 Revenue Forecasts for water and wastewater ($m)

	Unitywater Revenues
Water	232.0
Wastewater	206.3
Total revenue	**438.3**

Source: Unitywater (2012) Template 5.2.2.

2.13 Comparing Revenues with MARs

Under the Ministerial Direction, the Authority must compare the entities' revenues with the MAR calculated by the Authority.

The MAR is based on the Authority's estimate of total costs of carrying on a water and wastewater activity. The MAR is calculated using the Authority's estimate of total costs less relevant deductions to ensure no double counting of inflationary gain and capital contributions. Under the Direction, the entities have the choice of adopting a revenue offset or asset offset approach to capital contributions.

Unitywater's Submission

Unitywater estimate of the total costs of carrying on its water and wastewater activities in 2012-13 is shown in the table below. Unitywater has continued to apply a revenue offset approach to the treatment of capital contributions.

Unitywater submitted that:

(a) for 2010-11, Unitywater under-recovered against the MAR for both water ($11.3 million) and wastewater ($28.0 million); and

(b) for 2011-12, Unitywater is estimating an under-recovery against costs for both water ($33.7 million) and wastewater ($34.3 million).

For 2012-13, Unitywater is budgeting under-recovery in both water and wastewater activities with total under-recovery of $47.14 million or 9.71%.

Table 2.92: Unitywater's 2012-13 Total Costs and Total Revenues ($m)

	Water Unitywater 2012-13	***Wastewater Unitywater 2012-13***	***Total***
Total Costs (Unitywater)	310.66	312.58	623.24
less Indexation (Unitywater)	(28.79)	(44.34)	(73.13)
less Capital contributions (Unitywater)	(27.74)	(36.93)	(64.67)
Total Costs (Unitywater)	**254.12**	**231.32**	**485.44**
Total Revenues (Unitywater)	231.97	206.33	438.30
Total Revenues less Costs (Unitywater)	**(22.15)**	**(25.02)**	**(47.14)**
Per cent of Total Costs (Unitywater)	**(8.72%)**	**(10.82%)**	**(9.71%)**

Source: Unitywater (2012).

Unitywater committed to carrying forward under (over) recoveries between revenue and MAR on a NPV neutral basis for possible future recovery over a timeframe yet to be determined. Unitywater proposed to capture and annually index under (over) recoveries until such time as Unitywater's prices achieve MAR. The clearing of the under (over) recovery balance may occur through establishing a medium term price path in consultation with relevant stakeholders.

In response to further queries, Unitywater noted that the capacity to price up to the CPI cap under legislation was considered as one of the options available to Unitywater at the point in time at which a decision to freeze prices was made.

Authority's Analysis

A comparison of Unitywater's forecast revenues with the MAR based on the Authority's estimate of the total costs of carrying on Unitywater's water and wastewater activities is

provided below. The Authority has not carried over any under- or over-recovery from previous years, consistent with Unitywater's current approach.

In principle, the Authority supports a NPV neutral glide path to achieve full cost recovery, wherever possible. However, a NPV neutral glide path is not always possible, particularly in the context of significant price rises, without prices in the final year being substantially in excess of their efficient level, requiring transitioning (down) in the next period, as noted in the Authority's SEQ Price Monitoring Framework Final Report. Further, 'unders and overs' schemes in regulatory pricing are based on actual data.

Further, the Authority notes that Unitywater has not priced to the level of the cap in 2012-13.

Under a price monitoring approach in which the objective is to constrain the exercise of market power in a light-handed manner, the Authority is inclined to accept that under-recovery may be the result of a legitimate exercise of Unitywater's discretion to forego these revenues and accept a lower rate of return. Where this does not jeopardise the financial viability of the entity this is a legitimate business decision.

However, as in previous years, the Authority noted it is not in a position to provide upfront guidance on any particular glide path without first thoroughly examining the detailed data, modelling and assumptions underpinning it. The appropriateness of a glide path typically hinges on the level of over-recovery sought in the later years of the scheme, and the Authority does not have this longer term information.

Table 2.93: Comparison of Revenues and the Authority's MAR ($m)

	Water Unitywater 2012-13	***Wastewater Unitywater 2012-13***	***Total***
Total Costs (QCA)	310.80	304.53	615.33
less Indexation (QCA)	(29.10)	(44.90)	(74.00)
less Capital contributions (QCA)	(27.89)	(37.12)	(65.01)
Total Costs (QCA MAR)	**253.81**	**222.51**	**476.32**
Total Revenues (Unitywater)	231.97	206.33	438.30
Total Revenues less Costs (QCA)	**(21.84)**	**(16.18)**	**(38.02)**
Per cent of Total Costs (QCA)	**(8.60%)**	**(7.27%)**	**(7.98%)**

Source: Unitywater (2012), QCA calculations.

The Authority's analysis indicates that Unitywater's estimate of revenues falls below the Authority's MAR of $476.32 million by $38.02 million (or 7.98%). Water revenues fall below the MAR of $253.81 million by $21.84 million or 8.60% while wastewater revenues fall below the MAR of $222.51 million by $16.18 million or 7.27%.

The Authority has also estimated the amount of revenue that the Authority expects Unitywater would receive in 2012-13 based on Unitywater's prices and the Authority's estimated demand.

The Authority's estimate of the water revenues that Unitywater will receive remains slightly lower than Unitywater's when estimated on this basis. The Authority's estimate of the

wastewater revenues that Unitywater will receive is lower than Unitywater's, due to the Authority's lower number of connections.

The Authority further notes that its estimate of Unitywater's revenues for water ($231.55 million) and wastewater ($206.25 million) also fall below the Authority's MAR.

Table 2.94: Further Comparison of Revenues and the Authority's MAR ($m)

	Water 2012-13	*Wastewater 2012-13*	*Total*
Total Costs (QCA MAR)	**253.81**	**222.51**	**476.32**
Total QCA Expected Revenues	**231.55**	**206.25**	**437.61**
Difference	**(22.26)**	**(16.26)**	**(38.71)**
% of Total Costs (QCA)	(8.77%)	(7.31%)	(8.13%)

Source: QCA calculations.

2.14 Costs, Revenues and Prices

The reconciliation of costs, revenues and average prices is outlined in the table below.

Table 2.95: Costs and Revenues

	QCA Water 2011-12	*QCA Wastewater 2011-12*	*Unitywater Water 2012-13*	*Unitywater Wastewater 2012-13*	*QCA Water 2012-13*	*QCA Wastewater 2012-13*
Bulk Water Costs ($m)	90.71		114.94		114.41	
Distribution and Retail Costs ($m)						
Other operating costs	59.12	94.35	53.54	90.04	50.83	85.86
plus Tax	1.93	2.22	0.13	0.09	0.84	2.90
plus Return on Capital	103.61	156.05	108.55	167.17	109.74	169.32
plus Return of Capital	37.22	48.96	33.50	55.27	34.98	46.46
Total Costs ($m)	292.60	301.57	310.66	312.58	310.80	304.53
less Indexation	(27.47)	(41.38)	(28.79)	(44.34)	(29.10)	(44.90)
less Capital contributions	(26.29)	(43.75)	(27.74)	(36.93)	(27.89)	(37.12)
Total Costs (MAR)	**238.84**	**216.44**	**254.12**	**231.32**	**253.81**	**222.51**
Total Revenues (Unitywater)	**195.72**	**203.44**	**231.97**	**206.33**	**231.97**	**206.33**
Over- (Under-) recovery	**(43.12)**	**(13.00)**	**(22.12)**	**(25.02)**	**(21.84)**	**(16.18)**

Note: Shaded data reflects revenue and reasonable costs for 2011-12 in the 2011-12 interim price monitoring. Source: QCA calculations and Unitywater subsequent information.

Table 2.96: Average Prices

	Unitywater Water 2011-12	*Unitywater Wastewater 2011-12*	*Unitywater Water 2012-13*	*Unitywater Wastewater 2012-13*	*QCA Water 2012-13*	*QCA Wastewater 2012-13*
Total Revenues-MAR ($m)	**195.72**	**203.44**	**231.97**	**206.33**	**253.81**	**222.51**
Volume (ML or connections)[d]	46,000	293,492	54,177	295,188	53,859	295,382
Price ($/kL or $/connection)	$4.25/kl	$693.15	**$4.28/kl**	**$698.99**	**$4.71/kl**	**$753.30**

Note: Impact of rebate on average price is identified in section 2.4.3. Shaded data reflects Unitywater's revenue and average prices for 2011-12 in 2011-12 interim price monitoring. Source: QCA calculations and Unitywater (2012), Unitywater (2011).

2.15 Findings

For Unitywater:

(a) the retail and distribution component of water and wastewater prices for households and small business increased by less than the CPI cap of 1.3% imposed by the Queensland Government;

(b) revenues for non-capped trade waste and other core water services increased by 5.64%, compared with the increase in the costs of the relevant activity (5.18%);

(c) bulk water costs account for 37.0% of Unitywater's proposed total water costs in 2011-12. Retail and distribution operating costs account for 17.2%, return on capital for 34.9% and return of capital 10.8%;

(d) for wastewater, retail and distribution operating costs account for 28.8%, return on capital accounts for 53.5%, and return of capital 17.7%; and

(e) the most significant increases in Unitywater's proposed costs in 2012-13 relate to a 144.4% increase in tax and a 37.3% increase in bulk water costs.

The Authority's estimate of the costs of supply is lower than Unitywater's arising from its lower estimate of non-bulk operating costs. In this regard:

(a) Unitywater's estimate of water revenues is below the Authority's MAR of $253.81 million by $21.84 million or 8.60%;

(b) Unitywater's estimate of wastewater revenues is below the Authority's MAR of $222.51 million by $16.18 million or 7.27%; and

(c) as a whole, Unitywater's estimated revenues are below the Authority's MAR of $476.32 million by $38.02 million (or 7.98%).

The Authority has also estimated the amount of revenue that Unitywater will receive in 2012-13 based on Unitywater's prices and the Authority's estimated demand. The Authority's estimate of total expected Unitywater revenues ($437.61 million) is below the Authority's estimated MAR of $476.32 million.

APPENDIX A: MINISTERIAL DIRECTION

QUEENSLAND COMPETITION AUTHORITY ACT 1997
Section 23A
AMENDED MINISTERS' DIRECTION NOTICE

Direction

As responsible Ministers, pursuant to section 23A of the *Queensland Competition Authority Act 1997* (the QCA Act), we refer the monopoly distribution and retail water and wastewater activities (the activities) of the following Distributor-Retailer Authorities (the entities):

- Southern SEQ Distributor-Retailer Authority (Allconnex Water);
- Central SEQ Distributor-Retailer Authority (Queensland Urban Utilities); and
- Northern SEQ Distributor-Retailer (Unitywater);

to the Queensland Competition Authority (the QCA) for a price monitoring investigation covering the period from 1 July 2011 to 30 June 2013.

Conduct of the QCA pursuant to this Direction

In referring this investigation, we direct the QCA under section 24 of the Act as follows. For each entity, the QCA shall:

(a) provide timely and transparent information to customers about the costs and other factors underlying the provision of water and wastewater services, including distinguishing the bulk and distribution/retail costs to the extent that it is possible given the availability and reliability of relevant information;

(b) monitor the change in prices of distribution and retail water and wastewater services for households and small business customers having regard to the CPI price limit as described in the *South East Queensland Water (Distribution and Reform) Act 2009*;

(c) monitor the change in prices for water and wastewater services not included in the CPI price limit as described in the *South East Queensland Water (Distribution and Reform) Act 2009* having regard to the change in revenue from these services compared to the change in the total prudent and efficient cost of carrying on the relevant activity;

(d) provide guidance to entities on the application of the information requirements referred to in (j) below;

(e) recognise the Government's policy that the prices charged by the SEQ Water Grid Manager for bulk water storage, treatment and delivery are to be passed through to customers in full;

(f) consider the availability of information from the entity, their emerging capability to provide information and the transitional work required to integrate and establish the entities;

(g) accept the operational constraints imposed by the SEQ Urban Water Arrangements Reform Workforce Framework 2010;

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(h) monitor the maximum allowable revenue based on the total prudent and efficient costs of carrying on the activity including each of the following:

(i) the operational costs incurred in carrying on the activity;

(ii) depreciation; and

(iii) return on capital employed.

(i) adopt a weighted average cost of capital (WACC) of 9.35% for 2011/12 and for 2012/13 unless otherwise advised by the Authority by 1 March 2012;

(j) roll forward the regulated asset base (RAB) using the following principles:

(i) council distribution/retail asset valuations, establishing the initial regulated asset base as at 1 July 2008, are as advised by the Minister for Natural Resources, Mines and Energy and Minister for Trade;

(ii) the opening RAB for each subsequent year to be rolled forward annually in accordance with the following formula:

$RAB_t = (RAB_{t-1} + \text{Capital Expenditure}_t - \text{Regulatory Depreciation}_t - \text{Disposal}_t + \text{Indexation}_t)$
where t = the year under consideration;

(iii) to assess Capital Expenditure in (ii) above, the QCA is to assess capital expenditure (including information technology systems) for prudency and efficiency. The QCA must accept as prudent and efficient, and include in the RAB:

- actual capital expenditure, excluding establishment costs, for water and waste water as included in Council financial accounts for the period 1 July 2008 to 30 June 2010;
- allowable establishment costs as advised by the Minister for Natural Resources, Mines and Energy and Minister for Trade; and
- contributed, donated and gifted assets and capital expenditure funded through cash contributions and subsidies (capital contributions), for water and waste water for the period 1 July 2008 to 30 June 2010.

(iv) the QCA is to accept that, in setting prices from 1 July 2008, the councils applied a revenue offset approach to account for capital contributions received. This approach is to remain in effect until such time that the entity nominates, through their price monitoring information returns, to adopt the asset offset method. Where a change in methodology is adopted, the RAB is not to be adjusted retrospectively;

(v) to assess Regulatory Depreciation in (ii) above, the QCA must take into account for the period 1 July 2008 to 30 June 2010 the apportionment of Council distribution/retail valuations in (i) above to individual assets and evidence that

regulatory depreciation on the physical assets has been calculated using existing useful lives attaching to the individual assets;

(vi) to assess the Indexation in (ii) above, the QCA must for the annual periods between 1 July 2008 and 30 June 2010 use the annual June to June Australian Bureau of Statistics Consumer Price Index (all groups, Brisbane);

(k) monitor according to the QCA Final Report on the SEQ Interim Price Monitoring Framework (April 2010) and Information Requirements for 2011-12, except as amended by this referral, and excluding the process for triggering consideration of price setting regulation.

Consultation

The QCA must undertake an open consultation process with all relevant parties and consider submissions within the timetable for the review and reports. Consistent with section 34 of the QCA Act, all reports and submissions must be published on the QCA website.

Timing

The entities must provide their price monitoring information returns to the QCA by 31 August of each year.

The QCA must provide to responsible Ministers and the Minister for Energy and Water Utilities a draft report by 31 January for each year; and a final report by 31 March for each year.

[redacted]

ANDREW FRASER
Treasurer
Minister for State Development

[redacted]

RACHEL NOLAN
Minister for Finance
Minister for The Arts

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APPENDIX B: QUU CAPPED PRICES[53]

Table B.1: Brisbane

Residential Properties - Brisbane Description	Volume Charge Tier	2011/12	2012/13	Unit	% increase
Water Services					
Water access charge (per property)		$167.16	$167.16	pa.	0.0%
Water access charge - vacant land		$167.16	$167.16	pa.	0.0%
Tier 1 Consumption	<=255kL	$0.666900	$0.666900	/kL	0.0%
Tier 2 Consumption	256-310kL	$0.707940	$0.707940	/kL	0.0%
Tier 3 Consumption	>310kL	$1.261980	$1.261980	/kL	0.0%
State Government Bulk Water Charge	per kL	$1.787000	$2.057000	/kL	15.1%
Sewerage Services					
Sewerage access charge		$475.92	$475.92	pa.	0.0%
Sewerage access charge - reduced		$177.12	$177.12	pa.	0.0%

Non-residential Properties - Brisbane Description	Volume Charge Tier	2011/12	2012/13	Unit	% increase
Water Services					
Water access charge (per property)		$167.16	$169.32	pa.	1.3%
Water access charge - vacant land		$167.16	$169.32	pa.	1.3%
Tier 1 Consumption	<=200kL	$0.790020	$0.800290	/kL	1.3%
Tier 2 Consumption	201-300kL	$0.902880	$0.914617	/kL	1.3%
Tier 3 Consumption	>300kL	$1.323540	$1.340746	/kL	1.3%
State Government Bulk Water Charge	per klL	$1.787000	$2.057000	/kL	15.1%
Sewerage Services					
Sewerage access charge		$475.92	$482.16	pa.	1.3%
Sewerage access charge - reduced		$177.12	$179.40	pa.	1.3%
Pedestal Charges					
General (other - not included in	2 - 8 pedestals (each)	$505.80	$512.40	pa.	1.3%
categories below)	9 -12 pedestals (each)	$633.36	$641.64	pa.	1.3%
	over 12 pedestals (each)	$778.92	$789.00	pa.	1.3%
Multi-residential properties (non-	2 - 8 pedestals (each)	$418.92	$424.32	pa.	1.3%
community title scheme)	9 -12 pedestals (each)	$525.48	$532.32	pa.	1.3%
	over 12 pedestals (each)	$647.28	$655.68	pa.	1.3%
Retirement village, Child care centre,	2 - 8 pedestals (each)	$197.52	$200.04	pa.	1.3%
Convalescent Homes, Hospitals, Schools,	9 -12 pedestals (each)	$246.60	$249.84	pa.	1.3%
Kindergartens, Community Protection	over 12 pedestals (each)	$304.08	$308.04	pa.	1.3%
Centres, Churches, Welfare Homes					
Major Sporting Stadiums owned by the Major Sports Facilities Authority	Pedestal/s (each)	$505.80	$512.40	pa.	1.3%

[53] Bulk water charges are not capped and separately identified for reference.

Table B.2: Ipswich

Residential Properties - Ipswich Description	Volume Charge Tier	2011/12	2012/13	Unit	% increase
Water Services					
Water access charge per connection		$280.00	$280.00	pa.	0.0%
Water access charge - connected but not		$1,008.48	$1,008.48	pa.	0.0%
Water access charge vacant land - not con		$280.00	$280.00	pa.	0.0%
Water access charge vacant land -		$1,008.48	$1,008.48	pa.	0.0%
Tier 1 Consumption		$0.810540	$0.810540	/kL	0.0%
Tier 2 Consumption		$1.292760	$1.292760	/kL	0.0%
Tier 3 Consumption		$1.641600	$1.641600	/kL	0.0%
State Government Bulk Water Charge		$1.723000	$1.993000	/kL	15.7%
Fire service connection all sizes		$447.00	$447.00	pa.	0.0%
Sewerage Services					
Sewerage access charge		$550.00	$550.00	pa.	0.0%

Non-residential Properties - Ipswich Description	Volume Charge Tier	2011/12	2012/13	Unit	% increase
Water Services					
Water access charge based on connection size: (per connection)					
25mm or less		$339.36	$343.80	pa.	1.3%
26-32mm		$721.68	$731.04	pa.	1.3%
33-40mm		$1,147.20	$1,162.08	pa.	1.3%
41-50mm		$1,691.16	$1,713.12	pa.	1.3%
51-80mm		$4,281.84	$4,337.52	pa.	1.3%
81-100mm		$7,211.88	$7,305.60	pa.	1.3%
101-150mm		$17,240.64	$17,464.80	pa.	1.3%
151-250mm		$28,734.36	$29,107.92	pa.	1.3%
Greater than 250mm		$34,481.28	$34,929.48	pa.	1.3%
Water access charge vacant land (unconnected)		$332.88	$337.20	pa.	1.3%
Fire service connection all sizes		$447.00	$452.76	pa.	1.3%
Tier 1 Consumption	Tier 1 <=320kl	$0.810540	$0.821077	/kL	1.3%
Tier 2 Consumption	Tier 2 >320kl	$1.641600	$1.662941	/kL	1.3%
State Government Bulk Water Charge		$1.723000	$1.993000	/kL	15.7%
Sewerage Services					
Sewerage pedestal charge	Per pedestal	$567.96	$575.40	pa.	1.3%
Sewerage access charge vacant land		$567.96	$575.40	pa.	1.3%

Table B.3: Lockyer Valley – Residential Premises

Residential Properties - Lockyer Valley

Description	Volume Charge Tier	2011/12	2012/13	Unit	% increase
Water Services					
Tier 1 Consumption	Tier 1 <=300kL	$0.225720	$0.225720	/kL	0.0%
Tier 2 Consumption	Tier 2 >300kL	$1.087560	$1.087560	/kL	0.0%
State Government Bulk Water Charge		$1.980000	$2.250000	/kL	13.6%
Former Gatton Shire					
Water access charge - Full Pressure (per tenement)		$280.00	$280.00	pa.	0.0%
Water access charge - Constant Flow (per tenement)		$207.48	$207.48	pa.	0.0%
Vacant Land Water Access Charge					
Full Pressure Contiguous					
For the 1st 6 lots combined as one assessment		$186.72	$186.72	pa.	0.0%
For the 7th and each additional lot		$93.36	$93.36	pa.	0.0%
Full Pressure Non-Contiguous					
Lots with an area less than 2023 m^2 (per lot)		$186.72	$186.72	pa.	0.0%
Lots with an area of 2023 m^2 or more (per lot)		$279.96	$279.96	pa.	0.0%
Constant Flow Contiguous					
For the 1st 6 lots combined as one assessment		$131.40	$131.40	pa.	0.0%
For the 7th and each additional lot		$65.64	$65.64	pa.	0.0%
Constant Flow Non-Contiguous					
Lots with an area less than 2023 m^2 (per lot)		$131.40	$131.40	pa.	0.0%
Lots with an area of 2023 m^2 or more (per lot)		$207.48	$207.48	pa.	0.0%
Former Laidley Shire (excluding Forest Hill)					
Water access charge - Full Pressure (per tenement)		$280.00	$280.00	pa.	0.0%
Water access charge - Limited Flow (constant flow) (per tenement)		$207.48	$207.48	pa.	0.0%
Vacant Land - Full Pressure (per tenement)		$280.00	$280.00	pa.	0.0%
Vacant Land - Limited Flow (constant flow) (per tenement)		$207.48	$207.48	pa.	0.0%
Forest Hill					
Water access charge - Full Pressure (per tenement)		$280.00	$280.00	pa.	0.0%
Water access charge vacant land (per tenement)		$280.00	$280.00	pa.	0.0%
Water access charge - Water Pipeline (per tenement)		$315.00	$315.00	pa.	0.0%
Sewerage Services					
Sewerage access charge (per assessment)		$420.84	$420.84	pa.	0.0%
Sewerage access charge - Vacant land (per lot)		$231.00	$231.00	pa.	0.0%
Pressure Sewer Main (per assessment)		$318.12	$318.12	pa.	0.0%
Sewerage additional pedestal (per pedestal)		$318.12	$318.12	pa.	0.0%
Septic sewer - special arrangement		$82.16	$82.16	pa.	0.0%

Table B.4: Lockyer Valley – Non-residential Premises

Non-residential Properties - Lockyer Valley Description	Volume Charge Tier	2011/12	2012/13	Unit	% increase
Water Services					
Tier 1 Consumption	Tier 1 <=300kL	$0.441180	$0.446915	/kL	1.3%
Tier 2 Consumption	Tier 2 >300kL	$0.872100	$0.883437	/kL	1.3%
State Government Bulk Water Charge		$1.980000	$2.250000	/kL	13.6%
Former Gatton Shire (per tenement)					
Water access charge - Full Pressure					
1st tenement		$442.08	$447.84	pa.	1.3%
2nd to 6th tenements		$265.68	$269.16	pa.	1.3%
7th and each additional tenement		$221.16	$224.04	pa.	1.3%
Water access charge - Constant Flow					
1st tenement		$324.84	$329.04	pa.	1.3%
2nd to 6th tenements		$193.92	$196.44	pa.	1.3%
7th and each additional tenement		$162.84	$165.00	pa.	1.3%
Combined Residences/Businesses serviced by one meter					
Water access charge - Full Pressure		$442.08	$447.84	pa.	1.3%
Other Properties (Religious/Charitable/Non-Profit)					
Water access charge - Full Pressure		$237.48	$240.60	pa.	1.3%
Water access charge - Constant Flow		$169.68	$171.84	pa.	1.3%
Vacant Land Water Access Charge					
Water access charge - Full Pressure Contiguous					
For the 1st 6 lots combined as one assessment		$261.72	$265.08	pa.	1.3%
For the 7th and each additional lot		$130.92	$132.60	pa.	1.3%
Water access charge - Full Pressure Non-Contiguous					
Lots with an area less than 2023 m^2 (per lot)		$261.72	$265.08	pa.	1.3%
Lots with an area of 2023 m^2 or more (per lot)		$392.64	$397.80	pa.	1.3%
Water access charge - Constant Flow Contiguous					
For the 1st 6 lots combined as one assessment		$184.20	$186.60	pa.	1.3%
For the 7th and each additional lot		$92.04	$93.24	pa.	1.3%
Water access charge - Constant Flow Non-Contiguous					
Lots with an area less than 2023 m^2 (per lot)		$184.20	$186.60	pa.	1.3%
Lots with an area of 2023 m^2 or more (per lot)		$290.88	$294.72	pa.	1.3%
Former Laidley Shire (excluding Forest Hill) (per tenement)					
Water access charge - Full Pressure (standard)		$392.64	$397.80	pa.	1.3%
Water access charge - Full Pressure Other (Religious/Charitable/Non-profit)		$237.48	$240.60	pa.	1.3%
Water access full pressure charge vacant land		$392.64	$397.80	pa.	1.3%
Water access charge - Constant Flow (limited flow)		$290.88	$294.72	pa.	1.3%
Water access charge - Constant Flow Other (Religious/Charitable/Non-profit)		$169.68	$171.84	pa.	1.3%
Water access constant flow charge vacant land		$290.88	$294.72	pa.	1.3%
Water access charge - Water Pipeline		$392.64	$397.80	pa.	1.3%
Forest Hill (per tenement)					
Water access charge - Full Pressure		$349.08	$353.64	pa.	1.3%
Water access charge - Other (Religious/Charitable/Non-profit)		$252.12	$255.36	pa.	1.3%
Water access charge vacant land		$349.08	$353.64	pa.	1.3%
Stanbroke Beef Pty Ltd					
Special water access charge		$34,645.92	$35,096.28	pa.	1.3%
Sewerage Services					
Sewerage charge 1st pedestal		$420.84	$426.36	pa.	1.3%
Sewage additional pedestals (per pedestal)		$318.12	$322.20	pa.	1.3%
Sewerage access charge - Vacant land		$231.00	$234.00	pa.	1.3%
Pressure Sewer Main		$318.12	$322.20	pa.	1.3%
Sewerage charge 1st pedestal - Laidley Caravan Park		$420.84	$426.36	pa.	1.3%
Sewerage additional pedestal - Laidley Caravan Park (per pedestal)		$273.12	$276.72	pa.	1.3%

Table B.5: Scenic Rim

Residential Properties - Scenic Rim					
Description	Volume Charge Tier	2011/12	2012/13	Unit	% increase
Water Services					
Water access charge based on connection size (determined by a flow capacity factor, FCF)					
Connection Size	FCF				
20 mm	1	$280.00	$280.00	pa.	0.0%
25 mm	1.5625	$280.00	$280.00	pa.	0.0%
32 mm	2.56	$898.56	$898.56	pa.	0.0%
40 mm	4	$1,404.12	$1,404.12	pa.	0.0%
50 mm	6.25	$2,193.84	$2,193.84	pa.	0.0%
65 mm	12.0193	$4,218.96	$4,218.96	pa.	0.0%
80 mm	16	$5,616.24	$5,616.24	pa.	0.0%
100 mm	25	$8,775.36	$8,775.36	pa.	0.0%
150 mm	56.25	$19,744.56	$19,744.56	pa.	0.0%
200 mm	100	$35,101.56	$35,101.56	pa.	0.0%
Water access charge vacant land		$280.00	$280.00	pa.	0.0%
Water access charge - restricted demand		$280.00	$280.00	pa.	0.0%
Water Consumption		$0.831060	$0.831060	/kL	0.0%
State Government Bulk Water Charge		$2.087000	$2.358000	/kL	13.0%
Sewerage Services					
Sewerage access charge		$500.00	$500.00	pa.	0.0%
Sewerage access charge - vacant land (per lot)		$283.80	$283.80	pa.	0.0%

Non-residential Properties - Scenic Rim					
Description	Volume Charge Tier	2011/12	2012/13	Unit	% increase
Water Services					
Water access charge based on connection size (determined by a flow capacity factor, FCF)					
Connection Size	FCF				
20 mm	1	$351.00	$355.56	pa.	1.3%
25 mm	1.5625	$548.52	$555.60	pa.	1.3%
32 mm	2.56	$898.56	$910.20	pa.	1.3%
40 mm	4	$1,404.12	$1,422.36	pa.	1.3%
50 mm	6.25	$2,193.84	$2,222.40	pa.	1.3%
65 mm	12.0193	$4,218.96	$4,273.80	pa.	1.3%
80 mm	16	$5,616.24	$5,689.20	pa.	1.3%
100 mm	25	$8,775.36	$8,889.48	pa.	1.3%
150 mm	56.25	$19,744.56	$20,001.24	pa.	1.3%
200 mm	100	$35,101.56	$35,557.92	pa.	1.3%
Water access charge vacant land		$351.00	$355.56	pa.	1.3%
Water access charge restricted demand		$351.00	$355.56	pa.	1.3%
Water Consumption		$0.831060	$0.841864	/kL	1.3%
State Government Bulk Water Charge		$2.087000	$2.358000	/kL	13.0%
Sewerage Services					
Sewerage access charge (1st pedestal)		$518.88	$525.60	pa.	1.3%
Sewerage additional pedestals (per pedestal)		$314.16	$318.24	pa.	1.3%
Sewerage access charge - Vacant land (per lot)		$283.80	$287.52	pa.	1.3%

Table B.6: Somerset

Residential Properties - Somerset Description	Volume Charge Tier	2011/12	2012/13	Unit	% increase
Water Services					
Annual water access charge (per connection)		$280.00	$280.00	pa.	0.0%
Bore water annual access charge (Moore and Coominya townships)		$280.00	$280.00	pa.	0.0%
Tier 1 Consumption - per connection	Tier 1 (<=300kL)	$0.235980	$0.235980	/kL	0.0%
Tier 2 Consumption - per connection	Tier 2 (>300kL)	$0.543780	$0.543780	/kL	0.0%
State Government Bulk Water Charge		$2.356000	$2.627000	/kL	11.5%
Sewerage Services					
Former Esk Shire					
Per single residence, flat, one pedestal premise		$500.00	$500.00	pa.	0.0%
Sewerage access charge - Vacant land		$275.28	$275.28	pa.	0.0%
Kilcoy					
Per single residence, flat, one pedestal premise		$398.40	$398.40	pa.	0.0%
Sewerage access charge - Vacant land		$351.84	$351.84	pa.	0.0%

Non-residential Properties - Somerset Description	Volume Charge Tier	2011/12	2012/13	Unit	% increase
Water Services					
Annual water access charge (per connection)		$294.84	$298.68	pa.	1.3%
Bore water access charge (Moore and Coominya townships)		$282.12	$285.84	pa.	1.3%
Tier 1 Consumption - per connection	Tier 1 (<=300kl)	$0.235980	$0.239048	/kL	1.3%
Tier 2 Consumption - per connection	Tier 2 (>300kl)	$0.543780	$0.550849	/kL	1.3%
State Government Bulk Water Charge		$2.356000	$2.627000	/kL	11.5%
Sewerage Services					
Former Kilcoy Shire					
Sewerage access charge (per pedestal) - Government Properties		$540.96	$548.04	pa.	1.3%
Sewerage access charge (per pedestal) - Other non-residential Properties		$398.40	$403.56	pa.	1.3%
Sewerage access charge - Vacant land (per lot)		$351.84	$356.40	pa.	1.3%
Former Esk Shire					
Sewerage access charge (1st pedestal)	Base Charge:	$550.56	$557.76	pa.	1.3%
Building used exclusively for public worship		68% of base charge	68% of base charge	pa.	
Hall on land attracting a General rate		50%	50%	pa.	0.0%
Hall (excluding land attracting a General rate)		68%	68%	pa.	0.0%
Kindergarten School		68%	68%	pa.	0.0%
Government Properties (excluding		105%	105%	pa.	0.0%
Toogoolawah High School		158%	158%	pa.	0.0%
General non-residential		100%	100%	pa.	0.0%
For each additional pedestal, urinal and slop sink:		Per pedestal	Per pedestal		
Building used exclusively for public worship		5% of base charge	5% of base charge		
Hall		5%	5%		0.0%
Kindergarten School		5%	5%		0.0%
Properties where toilet facilities are made		12%	12%		0.0%
Properties where toilet facilities are made available for customer use:		Per pedestal	Per pedestal		
Hotel or Motel		38% of base charge	38% of base charge	pa.	
Nursing Home		38%	38%	pa.	0.0%
Caravan Park facility provided for the		12%	12%	pa.	0.0%
Government Properties (excluding		105%	105%	pa.	0.0%
Toogoolawah High School		158%	158%	pa.	0.0%
Other Properties		19%	19%	pa.	0.0%
Racecourse and showgrounds - single		5%	5%	pa.	0.0%
Public Convenience		50%	50%	pa.	0.0%
Allotment to which Council is prepared to provide a sewerage service, but which is not supplied with a sewerage service and on which a dwelling or		50%	50%	pa.	0.0%
Sewerage charges in respect of Vacant Land - per allotment		50%	50%	pa.	0.0%

APPENDIX C: UNITYWATER CAPPED PRICES[54]

Schedule - Utility Pricing Comparison 2011-12 to 2012-13		2011/12	2012/13	
Tariff Category	**Unit**	**Tariff Rate**	**Tariff Rate**	**Change %**
Schedule 2a - Drinking Water				
Sunshine Coast Residential				
Base Charge - Residential	per residence	$232.06	$232.04	-0.01%
Base Charge - Unconnected	per lot	$232.06	$232.04	-0.01%
Volumetric Tier : 0 - 219 kl	per kl	$0.538	$0.538	0.00%
Volumetric Tier : above 219 kl	per kl	$1.036	$1.036	0.00%
Bulk Water Charge	per kl	$1.340	$1.610	20.15%
Moreton Bay Residential				
Base Charge - Residential : Caboolture	per residence	$346.02	$346.00	-0.01%
Base Charge - Unconnected : Caboolture	per lot	$346.02	$346.00	-0.01%
Base Charge - Residential : Pine	per residence	$346.02	$346.00	-0.01%
Base Charge - Unconnected : Pine	per lot	$346.02	$346.00	-0.01%
Base Charge - Residential : Redcliffe	per residence	$346.02	$346.00	-0.01%
Base Charge - Unconnected : Redcliffe	per lot	$346.02	$346.00	-0.01%
Volumetric Tier : 0 - 280 kl	per kl	$0.176	$0.176	0.00%
Volumetric Tier : 281 - 360 kl	per kl	$0.849	$0.849	0.00%
Volumetric Tier : above 360 kl	per kl	$1.305	$1.305	0.00%
Bulk Water Charge	per kl	$1.922	$2.192	14.05%
Base Charge - Pine Rivers Block of Flats < 25mm pipe (subject to deemed factor)	per flat	$346.02	$346.00	-0.01%
Base Charge - Pine Rivers Industrial / Commerical < 25mm pipe (subject to deemed factor)	per flat	$346.02	$346.00	-0.01%
Base Charge - Pine Rivers Industrial / Commerical 32mm pipe (subject to deemed factor)	per flat	$884.74	$884.72	0.00%
Base Charge - Pine Rivers Industrial / Commerical 40mm pipe (subject to deemed factor)	per flat	$1,383.06	$1,383.06	0.00%
Base Charge - Pine Rivers Industrial / Commerical 50mm pipe (subject to deemed factor)	per flat	$2,161.09	$2,161.08	0.00%
Base Charge - Pine Rivers Industrial / Commerical 65mm pipe (subject to deemed factor)	per flat	$3,650.86	$3,650.84	0.00%
Base Charge - Pine Rivers Industrial / Commerical 80mm pipe (subject to deemed factor)	per flat	$5,531.20	$5,531.20	0.00%
Base Charge - Pine Rivers Industrial / Commerical 100mm pipe (subject to deemed factor)	per flat	$8,642.31	$8,642.31	0.00%
Base Charge - Pine Rivers Industrial / Commerical 150mm pipe (subject to deemed factor)	per flat	$19,445.72	$19,445.72	0.00%
Base Charge - Pine Rivers Industrial / Commerical 200mm pipe (subject to deemed factor)	per flat	$34,569.24	$34,569.24	0.00%
Base Charge - Pine Rivers Industrial / Commerical 225mm pipe (subject to deemed factor)	per flat	$43,751.31	$43,751.28	0.00%
Base Charge - Pine Rivers Industrial / Commerical 250mm pipe (subject to deemed factor)	per flat	$54,014.96	$54,014.96	0.00%
Base Charge - Pine Rivers Industrial / Commerical 300mm pipe (subject to deemed factor)	per flat	$77,780.80	$77,780.80	0.00%
Sunshine Coast Non-Residential				
Volumetric Tier : 0 - 219 kl	per kl	$0.538	$0.538	0.00%
Volumetric Tier : above 219 kl	per kl	$1.036	$1.036	0.00%
Bulk Water Charge	per kl	$1.340	$1.61	20.15%
Base Charge - Unconnected	per lot	$232.06	$232.04	-0.01%
Base Charge - Connected < 32mm pipe	per connection	$232.06	$232.04	-0.01%
Base Charge - Connected 32mm pipe	per connection	$596.73	$596.72	0.00%
Base Charge - Connected 40mm pipe	per connection	$932.40	$932.40	0.00%
Base Charge - Connected 50mm pipe	per connection	$1,456.61	$1,456.60	0.00%
Base Charge - Connected 80mm pipe	per connection	$3,729.60	$3,729.60	0.00%
Base Charge - Connected 100mm pipe	per connection	$5,827.50	$5,827.48	0.00%
Base Charge - Connected 150mm pipe	per connection	$13,111.61	$13,111.60	0.00%
Base Charge - Connected 200mm pipe	per connection	$23,310.00	$23,310.00	0.00%
Moreton Bay Non-Residential				
Volumetric Tier : 0 - 280 kl	per kl	$0.176	$0.176	0.00%
Volumetric Tier : 281 - 360 kl	per kl	$0.849	$0.849	0.00%
Volumetric Tier : above 360 kl	per kl	$1.305	$1.305	0.00%
Bulk Water Charge	per kl	$1.922	$2.192	14.05%
Base Charge - Unconnected Caboolture	per lot	$346.02	$346.00	-0.01%
Base Charge - Connected Caboolture	per connection	$346.02	$346.00	-0.01%
Base Charge - Community Caboolture	per connection	$346.02	$346.00	-0.01%
Base Charge - Unconnected Pine	per lot	$346.02	$346.00	-0.01%
Base Charge - Connected Pine	per connection	$346.02	$346.00	-0.01%
Base Charge - Community Pine	per connection	$346.02	$346.00	-0.01%
Base Charge - Unconnected Recliffe	per lot	$346.02	$346.00	-0.01%
Base Charge - Connected Redcliffe	per connection	$346.02	$346.00	-0.01%
Base Charge - Community Redcliffe	per connection	$346.02	$346.00	-0.01%
Base Charge - Pine Rivers Commercial/Industrial < 25mm pipe (subject to deemed factor)	per connection	$346.02	$346.00	-0.01%
Base Charge - Pine Rivers Commercial/Industrial 32mm pipe (subject to deemed factor)	per connection	$884.74	$884.72	0.00%
Base Charge - Pine Rivers Commercial/Industrial 40mm pipe (subject to deemed factor)	per connection	$1,383.06	$1,383.04	0.00%
Base Charge - Pine Rivers Commercial/Industrial 50mm pipe (subject to deemed factor)	per connection	$2,161.09	$2,161.08	0.00%
Base Charge - Pine Rivers Commercial/Industrial 65mm pipe (subject to deemed factor)	per connection	$3,650.86	$3,650.84	0.00%
Base Charge - Pine Rivers Commercial/Industrial 80mm pipe (subject to deemed factor)	per connection	$5,531.20	$5,531.20	0.00%
Base Charge - Pine Rivers Commercial/Industrial 100mm pipe (subject to deemed factor)	per connection	$8,642.31	$8,642.28	0.00%
Base Charge - Pine Rivers Commercial/Industrial 150mm pipe (subject to deemed factor)	per connection	$19,445.72	$19,445.72	0.00%
Base Charge - Pine Rivers Commercial/Industrial 200mm pipe (subject to deemed factor)	per connection	$34,569.24	$34,569.24	0.00%
Base Charge - Pine Rivers Commercial/Industrial 225mm pipe (subject to deemed factor)	per connection	$43,751.31	$43,751.28	0.00%
Base Charge - Pine Rivers Commercial/Industrial 250mm pipe (subject to deemed factor)	per connection	$54,014.96	$54,014.96	0.00%
Base Charge - Pine Rivers Commercial/Industrial 300mm pipe (subject to deemed factor)	per connection	$77,780.80	$77,780.80	0.00%

[54] Bulk water charges are not capped and are separately identified for reference.

Schedule - Utility Pricing Comparison 2011-12 to 2012-13		2011/12	2012/13	
Tariff Category	**Unit**	**Tariff Rate**	**Tariff Rate**	**Change %**
Schedule 2b - Sewerage Services				
Sunshine Coast Residential				
Base Charge - Residential Dwelling/Unit	per residence	$570.83	$570.83	0.00%
Base Charge - Unconnected Dwelling/Unit	per residence	$570.83	$570.80	-0.01%
Base Charge - Unconnected Lots	per lot	$547.00	$547.00	0.00%
Body Corporate & Community Management Act 1997 Lots with Common Sewerage	per pedestal	$570.83	$570.80	-0.01%
Base Charge - Dwelling/Unit in Common Effluent Scheme in Caloundra	per residence	$454.80	$454.80	0.00%
Base Charge - Vacant Lot in Common Effluent Scheme in Caloundra	per lot	$423.72	$423.72	0.00%
Base Charge - Cooroy, Lake MacDonald and Lake Cootharba Septic Effluent Schemes	per pedestal	$480.70	$480.68	0.00%
Moreton Bay Residential				
Base Charge - Residential Dwelling/Unit Caboolture	per residence	$744.88	$744.88	0.00%
Base Charge - Residential Dwelling/Unit Pine	per residence	$744.88	$744.88	0.00%
Base Charge - Residential Dwelling/Unit Redcliffe	per residence	$744.88	$744.88	0.00%
Base Charge - Unconnected Lots in Pine Rivers	per lot	$744.88	$744.88	0.00%
Base Charge - Unconnected Lots in Caboolture	per lot	$688.94	$688.92	0.00%
Base Charge - Unconnected Lots in Redcliffe : 1st Lot	per lot	$569.80	$569.80	0.00%
Base Charge - Unconnected Lots in Redcliffe : Lots in excess of 3 in each parcel of land	per lot	$284.90	$284.88	-0.01%
Sunshine Coast Non-Residential				
Caloundra				
Base Charge - General Commercial Industrial : 1st Pedestal	per pedestal	$607.09	$607.08	0.00%
Base Charge - General Commercial Industrial : Each Additional Pedestal	per pedestal	$454.80	$454.80	0.00%
Base Charge - General Commercial Industrial : Urinals	per urinal (0.5m)	$152.29	$152.28	-0.01%
Base Charge - General Commercial Industrial : Each Strata Unit With Common Sewerage	per unit	$304.58	$304.56	-0.01%
Base Charge - Schools/Hospitals : 1st Pedestal	per pedestal	$607.09	$607.08	0.00%
Base Charge - Unconnected Lots	per lot	$547.00	$547.00	0.00%
Base Charge - Schools/Hospitals : Each Additional Pedestal	per pedestal	$454.80	$454.76	-0.01%
Base Charge - Schools/Hospitals : Urinals	per urinal (0.5m)	$304.58	$304.56	-0.01%
Base Charge - Hooper Lodge : Double Unit	per unit	$454.80	$454.80	0.00%
Base Charge - Hooper Lodge : Single Unit	per unit	$304.58	$304.56	-0.01%
Caravan Parks	per pedestal	$607.09	$607.08	0.00%
Backwash Permit		$666.14	$666.12	0.00%
Common Effluent Disposal - vacant		$423.72	$423.72	0.00%
Additional Sewerage Charge		$212.38	$212.38	0.00%
Noosa				
Base Charge - General Commercial Industrial : 1st Pedestal	per pedestal	$645.42	$645.40	0.00%
Base Charge - General Commercial Industrial : 2nd Pedestal	per pedestal	$645.42	$645.40	0.00%
Base Charge - General Commercial Industrial : Each Additional Pedestal	per pedestal	$568.76	$568.76	0.00%
Base Charge - General Commercial Industrial : Per 2m Urinals	per urinal (2m)	$568.76	$568.76	0.00%
Base Charge - Unconnected Lots	per lot	$645.42	$645.40	0.00%
Caravan Parks	per pedestal	$645.42	$645.40	0.00%
Base Charge - 2+ Bedroom Retirement Village Dwelling	per dwelling	$568.76	$568.76	0.00%
Base Charge - 1 Bedroom Retirement Village Dwelling	per dwelling	$529.39	$529.36	-0.01%
Base Charge - Child Care Center/Kindergarten Infant Pedestal	per pedestal	$426.83	$426.80	-0.01%
Base Charge - Tewantin Sports Complex Serviced by Common Effluent Line	per pedestal	$645.42	$645.40	0.00%
Base Charge - Cooroy, Lake MacDonald and Lake Cootharba Septic Effluent Schemes		$480.70	$480.68	0.00%
Maroochy				
Base Charge - Maroochy Each Unit under Body Corp & Comm Mgmt Act 1997 (subject to deemed factor)	per connection	$420.61	$420.60	0.00%
Base Charge - Maroochy Commercial/Industrial 20 - 25mm pipe (subject to deemed factor)	per connection	$420.61	$420.60	0.00%
Base Charge - Maroochy Commercial/Industrial 32mm pipe (subject to deemed factor)	per connection	$1,074.33	$1,074.32	0.00%
Base Charge - Maroochy Commercial/Industrial 40mm pipe (subject to deemed factor)	per connection	$1,678.32	$1,678.32	0.00%
Base Charge - Maroochy Commercial/Industrial 50mm pipe (subject to deemed factor)	per connection	$2,622.11	$2,622.08	0.00%
Base Charge - Maroochy Commercial/Industrial 80mm pipe (subject to deemed factor)	per connection	$6,711.20	$6,711.20	0.00%
Base Charge - Maroochy Commercial/Industrial 100mm pipe (subject to deemed factor)	per connection	$10,485.35	$10,485.32	0.00%
Base Charge - Maroochy Commercial/Industrial 150mm pipe (subject to deemed factor)	per connection	$23,591.79	$23,591.76	0.00%
Base Charge - Unconnected Lots	per lot	$547.00	$420.60	-23.11%
Volumetric Sewerage Charge	per kl	$2.662	$2.66	0.00%
Moreton Bay Non-Residential				
Caboolture				
Base Charge - General Commercial Industrial : Pedestal	per pedestal	$744.88	$744.88	0.00%
Base Charge - General Commercial Industrial : Sanitry Napkin Disposal Unit	per unit	$744.88	$744.88	0.00%
Base Charge - General Commercial Industrial : Urinals	per urinal	$744.88	$744.88	0.00%
Base Charge - Unconnected Lots	per lot	$688.94	$688.92	0.00%
Caravan Parks : Unconnected Sites	per site	$445.48	$445.48	0.00%
Caravan Parks : Connected Sites	per site	$596.73	$596.72	0.00%
Pine Rivers				
Base Charge - General Commercial Industrial : Pedestal	per pedestal	$744.88	$744.88	0.00%
Base Charge - General Commercial Industrial : Urinals	per urinal	$744.88	$744.88	0.00%
Base Charge - Unconnected Lots	per lot	$744.88	$744.88	0.00%
Base Charge - Caravan Parks : Unconnected Sites	per pedestal	$744.88	$744.88	0.00%
Base Charge - Caravan Parks : Connected Sites	per pedestal	$744.88	$744.88	0.00%
Base Charge - Retirement Villages : Each Detached House/Residential Unit	per unit	$744.88	$744.88	0.00%

Schedule - Utility Pricing Comparison 2011-12 to 2012-13		2011/12	2012/13	
Tariff Category	**Unit**	**Tariff Rate**	**Tariff Rate**	**Change %**
Schedule 2b - Sewerage Services				
Redcliffe				
Base Charge - General Commercial Industrial : Pedestal	per pedestal	$744.88	$744.88	0.00%
Base Charge - General Commercial Industrial : Urinals	per urinal	$744.88	$744.88	0.00%
Base Charge - Body Corporate & Community Management Act 1997 Lot	per lot	$744.88	$744.88	0.00%
Base Charge - Each Lot in Excess of 3 in Each Parcel of Land	per lot	$284.90	$284.88	-0.01%
Base Charge - Unconnected Lots	per lot	$569.80	$569.80	0.00%
Caravan Parks	Each 227 kl consumed in the previous year	$744.88	$744.88	0.00%
Hotels/Motels/Churches/Den. Schools/Discounted/Other (Redcliffe)	Each pedestal/unit or 227 kl consumed in the previous year (whichever is the lesser)	$744.88	$744.88	0.00%
Horse Washing Facilities - Each Facility on a separate property	per facility	$744.88	$744.88	0.00%
Trade Waste Generators (Redcliffe)	Each pedestal/unit or 227 kl consumed in the previous year (whichever is the greater)	$744.88	$744.88	0.00%
Notwithstanding that land may be subject to a sewerage charge in another category Unitywater may approve that such land in Redcliffe be charged:	Each pedestal/unit or 227 kl consumed in the previous year (whichever is the greater)	$371.92	$371.92	0.00%

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