QUEENSLAND COMPETITION AUTHORITY

**Draft Report**

# SEQ Interim Price Monitoring for 2010/11

# Part B – Detailed Assessment

**February 2011**

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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 concerning the monitoring of water and wastewater distribution and retail activities in South East Queensland. 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 on the Weighted Average Cost of Capital for 2011/12 is **Monday 21 February 2011**. Submissions on all other matters are due by **Monday 28 February 2011**.

**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 Ministerial Direction

Under the Ministerial Direction, the Authority must inform customers of the costs and other factors underlying the annual increase in water and wastewater prices, and distinguish the bulk and distribution/retail components to the extent that it is possible given the availability and reliability of relevant information (**Appendix A**).

The Authority must also monitor the revenues of Queensland Urban Utilities (QUU) water and wastewater activities against the maximum allowable revenue (MAR) determined by the Authority based on prudent and efficient capital and reasonable operating costs. Further, the Authority must advise the entities by 1 March 2011 and 1 March 2012 of the WACC benchmark it will consider in 2011/12 and 2012/13 respectively.

## 1.2 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, as provided by QUU in its submission, appear in Table 1 below.

**Table 1: QUU Service and Asset Base**

| | ***Brisbane*** | ***Ipswich*** | ***Somerset*** | ***Scenic Rim*** | ***Lockyer Valley*** | ***Total*** |
|---|---|---|---|---|---|---|
| Population | 1,052,458 | 162,383 | 21,608 | 37,419 | 35,633 | 1,309,501 |
| Residential Water Connections | 399,922 | 61,482 | 4,178 | 5,025 | 10,172 | 480,779. |
| Non-Residential Waster Connections | 30,687 | 4,217 | 518 | 2,210 | 531 | 38,163 |
| Water reservoirs | 42 | 29 | 9 | 19 | 16 | 115 |
| Water supply network (km) | 6,368 | 1,536 | 207 | 300 | 431 | 8,842 |
| Wastewater network (km) | 6,842 | 1,388 | 80 | 150 | 77 | 8,537 |
| Wastewater treatment plants | 9 | 4 | 5 | 6 | 4 | 28 |

*Source QUU (2010).*

A map of the area serviced by QUU is shown in Figure 1 below.

**Figure 1: QUU Service Area**

## 1.3 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.

As noted previously, the Authority has not sought to review prices (or tariff structures) in detail in this first review but, for broad comparative purposes, notes the changes in average prices and residential bills. Average prices provide, at best, a broad overview of price changes.

*Average Prices*

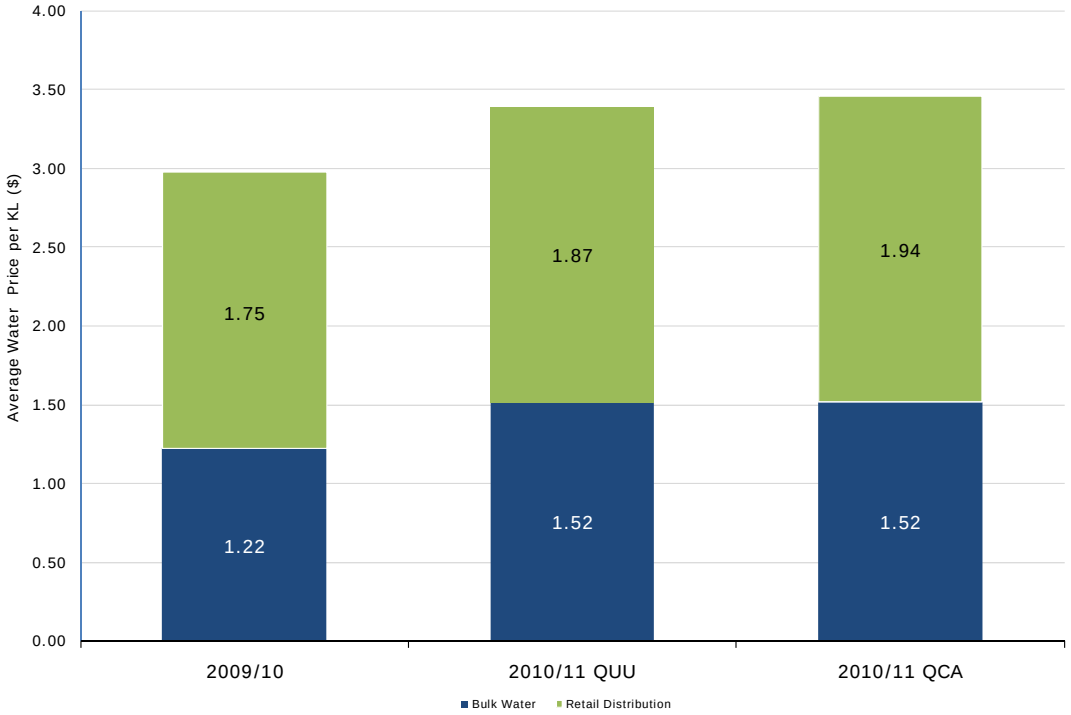
QUU's average water and wastewater prices increased across all customer groups in 2010/11. For reasons identified further below, the average price charged by QUU differs from that implied by the Authority's analysis. Charts 1 and 2, and Table 2 refer.

As noted previously, prices are not necessarily set by the entities on the basis of costs alone although QUU has advised that costs were the dominant driver in 2010/11. The Authority's previous monitoring of councils' prices indicated that councils did not always base prices on costs in previous years.

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

Average prices have been calculated by dividing total revenues by volumes – per kL (for water) and per connection (for wastewater).[1]

**Chart 1: Average Water Prices**




*Source QUU (2010), QCA (see section 1.13).*

[1] The 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: Average Wastewater Prices**


*Source QUU (2010), QCA calculations (see section 1.13)*

**Table 2: Average Prices[ab]**

| | *2009/10* | *QUU 2010/11* | *QCA 2010/11* |
|---|---|---|---|
| Water ($/kL) | 2.97 | 3.39 | 3.46 |
| % increase compared to 2009/10 | | 13.89% | 16.17% |
| Wastewater ($/connection) | 622.03 | 697.25 | 679.76 |
| % increase compared to 2009/10 | | 12.09% | 9.28% |

[a] *Average water price = Annual water revenue ($) / total kl sold .* [b]*Average wastewater price = Annual wastewater revenue ($) / total connections. Average QCA price = QCA MAR / QCA kL (water) or connections (wastewater)*

As evident from the above table, the Authority's analysis suggests even higher average annual water prices of $3.46/kL could be justified on the basis of costs alone for water. For wastewater, average prices appear too high when considered against the Authority's assessment of costs. This largely follows from the Authority's adoption of higher, more recent estimates of wastewater connections than QUU used in setting prices. The more recent estimates were provided by QUU.

The Authority's average price is based on 2010/11 costs alone (the Authority's MAR). That is, the Authority's average price for 2010/11 reflects full costs estimated on an annual basis. Ideally, prices should be set, and smoothed, over a longer period to avoid large annual variations.[2]

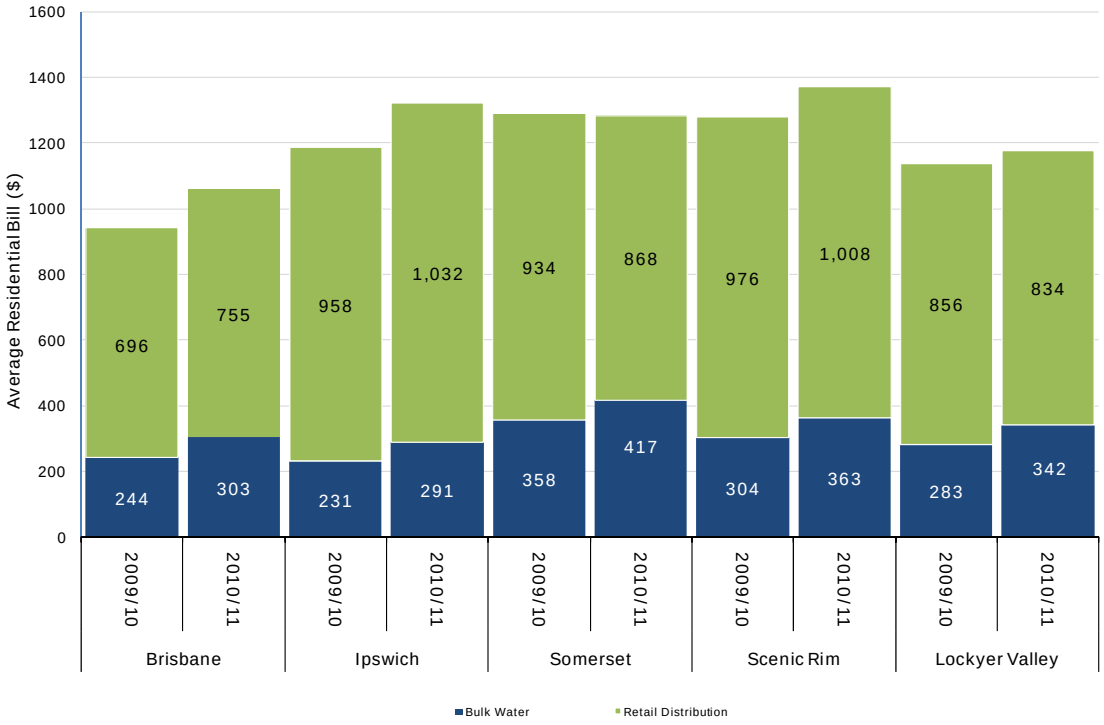
[2] See the Authority Final Report *SEQ Interim Price Monitoring Framework* (April 2010).

*Residential Bills*

Total residential bills for household water and wastewater services increased across SEQ, except for in Somerset (Chart 3). Bill increases ranged from $37 in Lockyer Valley up to $134 in Ipswich. In Somerset, bills fell by $7.08, as a decrease in the wastewater bill more than offset the increase in the water bill.[3]

The residential bills used in the Authority's analysis have been 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 has been based on the approach adopted in each council area. For Somerset and Lockyer Valley this was one pedestal per household, in other council areas the bill is based on a fixed access charge.

**Chart 3: Total Residential Bills**




*Notes 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, and excludes Forest Hill. No early payment discounts were applied.*

Bulk water accounts for a smaller proportion of residential bills than for average water prices as the residential bill includes water and wastewater, and wastewater has no bulk water component.

The Authority did not calculate a residential bill consistent with Authority estimates of efficient costs in 2010/11, as the Authority's assessment of costs in this review period has only been able to be undertaken on an aggregate basis, rather than by customer group as there is no alignment of costs with individual tariffs.

[3] The Somerset bill fell as QUU applied any previous council discounts for early payment to 2009/10 fixed access charges before an increase in water and wastewater prices was applied. A 15% discount was applied to Somerset's 2009/10 fixed access charges before a 5% increase in water prices and a 10.5% increase in wastewater prices was applied. The Authority has used published prices for its calculations.

## 1.4 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. Details of those standards are addressed further below.

Estimates of demand for water and wastewater have a direct impact on the prudency and efficiency of operating and capital expenditure.

*QUU's submission*

QUU forecasts water demand, sewage volumes and recycled water usage on an annual basis. QUU submitted that these forecasts are based on the latest available data and growth rates, correlated with projections developed for the Queensland Government by the QWC, primarily through its SEQ Water Strategy. Subsequent information provided by QUU indicates that the demand estimates in their submission are consistent with those at the time of price setting.

QUU stated that the major drivers of annual demand are:

(a) population growth – these are drawn from the Queensland Government's Population Information and Forecasting Unit (PIFU), the SEQ Regional Plan, town planning decisions made by shareholding councils and the Urban Land Development Authority, and requests and feedback from QUU's major customers;

(b) industrial and commercial growth – QUU stated that, in the Brisbane and Ipswich districts, this constituted approximately 41% of the 2008/09 total customer demand;

(c) water restrictions and water efficiency – while anticipating that reductions in water use due to the drought and the resulting water restrictions will continue in the short term, QUU is forecasting some upward creep to a plateau of between 200-230 litres per person per day (L/p/d) and has set its infrastructure design standards accordingly. This target has been set in consultation with the QWC; and

(d) non-revenue water – QUU noted that bulk water purchases and volumes billed to customers differs as a result of background leakage, legal unmetered use (e.g. for fire fighting), illegal use (theft) and meter inaccuracies (generally resulting in under billing). QUU noted that the SEQ Pressure Leakage Management Program has reduced non-revenue water by around 29 ML/day or 22 L/p/d. The program is due to end between 2010 and 2012 and savings will taper off. Further, QUU noted that meter replacements are improving meter accuracy and reducing the quantity of unrecorded consumption.

*Authority's Analysis*

The Authority engaged Frontier Economics (Frontier) to review the appropriateness of QUU's demand forecasts for water and wastewater activities from 1 July 2010. Frontier was required to determine whether the demand forecasts have been developed using appropriate forecasting methodologies and reflect reasonable data assumptions.

General Approach

Frontier reviewed the key drivers of demand. In addition to those set out by QUU in their submission, Frontier noted that dwelling demographics, temperature, rainfall, prices and pricing structures can also affect demand.

Frontier considered that the relevance of each driver should be determined using a progressive selection process that takes into account the statistical significance of each variable.

### Data Adequacy

The Authority requested data on past and forecast demand by deemed category in its information requirement for 2010/11. In particular, the Authority requested that a demand forecast for each tariff or tariff component be provided.

In undertaking its review, Frontier noted that SEQ water has recently undergone significant structural reform and, while such reform is expected to ultimately benefit water users, relevant historical data is not always available or has not been transferred from councils to the entities, making forecasting difficult.

Frontier noted that QUU did not provide historical data (except for Brisbane) or forecasts of demand for each tariff component. Frontier also noted that QUU's pricing is based on average usage data (e.g. residential L/p/d).

The Authority considers that it would be prudent for QUU to collect data on the demand corresponding to each component of prices, as this data is generated at any rate for billing purposes and would form a useful basis for future forecasts – and particularly when tariff structures are to be reviewed. This data will be expected in future years.

Further to this, Frontier noted that an independent review of demand for regulatory purposes typically requires a written description of the forecasting method, including the key issues addressed and assumptions adopted. Consistency between the demand estimates used for forecasting revenue and for capital planning should be documented, with any differences between the two approaches and values explained and made transparent.

Frontier noted that, while QUU had not formally documented its forecasting method, QUU had advised that demand forecasts for pricing and operating costs are done separately to those for capital planning, but both look at historical trends and project forward official growth forecasts and anticipated water use trends.

**The Authority considers that QUU should document the method and approach undertaken in preparing its demand forecasts. Any differences between the forecasting approaches used for pricing and capital planning should be clearly identified and explained.**

### Residential Connections

Given that the majority of QUU's revenue derives from residential usage, Frontier first assessed residential connections and growth, and then corresponding volumes.

Frontier used the growth in private dwellings from the PIFU's May 2010 forecasts to review residential connections. Frontier noted that PIFU lies within the Queensland Government's Office of Economic and Statistical Research (OESR) and that this unit provides transparent and rigorous analysis of population dynamics and forecasts based on statistical analysis to clients at all levels of government and in the private sector. PIFU provides the Government's official population forecasts.

Frontier noted that alternative (or complementary) forecasts could include those based on:

(a) historical data from the QWC (2008-2010). However, Frontier noted that this data is not consistent over time due to significant local council restructuring that occurred in 2008. In addition, the data is unaudited billing data and, as a result, may contain errors relating to billing and meter reading. As a result, while Frontier considered this historical data a relevant point of comparison with QUU forecasts, Frontier preferred PIFU's forward-looking forecasts;

(b) the SEQ Regional Plan 2009-2031 (the Plan) which provides dwelling projections from 2006 to 2031. However, the Plan's projections are a policy target rather than an actual forecast, and are more aggregated than PIFU's – for example, a single dwelling projection only is provided for Lockyer Valley, Scenic Rim and Somerset whereas PIFU provides more disaggregated estimates. Therefore, Frontier preferred PIFU estimates;

(c) the WGM. The South East Queensland Market Rules require the WGM to issue grid instructions to bulk suppliers that specify the volume of water to be made available at each bulk supply point. Under the system operating plan made under the *Water Act 2000*, grid instructions must be based on an approved operating strategy, which must detail how the WGM intends to supply water to meet the forecast demands of each of its customers. The operating strategy was not available at the time of the Authority's assessment.

**The Authority accepts that PIFU growth rates are the most reliable independent estimates of connections growth currently available.**

Residential Connections – QUU Estimates

Table 3 outlines the estimate of residential water connections provided by QUU.

**Table 3: QUU Water Connections – residential**

| | ***2010/11*** | ***2011/12*** | ***2012/13*** |
|---|---|---|---|
| Brisbane | 399,922 | 403,921 | 407,960 |
| Ipswich | 61,482 | 62,097 | 62,718 |
| Lockyer Valley | 10,172 | 10,274 | 10,376 |
| Somerset | 4,178 | 4,241 | 4,304 |
| Scenic Rim | 5,025 | 5,100 | 5,177 |
| **QUU** | **480,779** | **485,633** | **490,536** |

*Source QUU (2010) data template*

Frontier compared QUU's forecast growth in residential connections with PIFU 2010 dwellings growth and historical trends based on council data from the QWC. Table 4 refers. Frontier considered that QUU had forecast relatively low growth in connections over 2011-13 compared to past trends and estimates by PIFU.

**Table 4: QUU residential annual growth rates (%)[4]**

| | *QWC 2008-10 Connections* | *QUU 2011-13 Connections* | *PIFU 2006-16 Dwellings* |
|---|---|---|---|
| Brisbane | 2.9 | 1.0 | 1.6 |
| Ipswich | 3.0 | 1.0 | 4.5 |
| Lockyer | 3.5 | 1.0 | 3.1 |
| Somerset | 4.8 | 1.5 | 2.6 |
| Scenic Rim | 3.8 | 1.5 | 2.9 |

*Source QWC historical data, QUU (2010) data template, PIFU (2010)*

In follow up discussions, QUU provided Frontier with actual billing statistics for residential water and wastewater accounts for the period between July-September 2010.

Taking into account the actual first quarter billing data, Frontier adjusted the QUU forecasts for 2010/11 for each QUU council area using PIFU growth rates (Table 5). This generated forecasts which were consistent with QUU estimates. Frontier then applied PIFU growth rates to forecast the connection numbers for 2011/12 and 2012/13. This resulted in higher estimates in those years than QUU estimated.

The Authority has accepted Frontier's approach and estimates in its review of capital and operating expenditure.

**Table 5: QUU Water Connections (Amended) – residential**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Brisbane | 397,502 | 403,966 | 410,535 |
| Ipswich | 62,788 | 65,634 | 68,610 |
| Lockyer Valley | 10,013 | 10,326 | 10,649 |
| Somerset | 4,641 | 4,762 | 4,887 |
| Scenic Rim | 5,852 | 6,019 | 6,192 |
| QUU (Frontier) | 480,796 | 490,708 | 500,871 |
| QUU (QUU) | 480,779 | 485,633 | 490,536 |
| **Difference** | **18** | **5,075** | **10,335** |

*Source Frontier (2010)*

**The Authority considers that residential connections for water should be based on PIFU forecasts and the updated billing data provided by QUU.**

[4] Growth rates are the annual average compound rates.

Water Volumes

Frontier noted that QUU has based its forecasts of water volumes on assumptions of average usage and growth factors provided, but not substantiated, by councils. Forecast average residential water usage (L/p/day) varies across each council area (Table 6). Forecast total residential water demand is derived from assumed average residential water usage per person per day, residential occupancy rates and connections (Table 7).

**Table 6: QUU assumptions regarding per person per day (litres)**

| | *2008/2009* | *2009/2010* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Brisbane | - | - | 175 | 180 | 185 |
| Ipswich | - | - | 175 | 180 | 185 |
| Lockyer Valley | - | - | 157.5 | 162 | 166.5 |
| Somerset | - | - | 157.5 | 162 | 166.5 |
| Scenic Rim | - | - | 157.5 | 162 | 166.5 |

*Source QUU (2010) Note No historical data provided by QUU.*

**Table 7: QUU Residential Water Demand (ML/year)**

| | *2008/2009* | *2009/2010* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Brisbane | 53,095 | 58,897 | 60,291 | 62,633 | 65,017 |
| Ipswich | - | - | 9,968 | 10,355 | 10,749 |
| Lockyer Valley | - | - | 1,066 | 1,108 | 1,150 |
| Somerset | - | - | 601 | 627 | 654 |
| Scenic Rim | - | - | 722 | 754 | 787 |
| QUU | - | - | 72,647 | 75,477 | 78,356 |

*Note Residential water demand (ML/year) = litres per person per day x residential occupancy rate x number of connections x 365 / 1,000,000.*
*Source QUU (2010)*

The Authority notes that the assumptions regarding daily residential usage differ from the Target 200 (L/p/day) and the infrastructure planning assumption of 230 L/p/day in the SEQ Water Strategy.

The QWC has advised that the SEQ Water Strategy assumptions are macro level regional forecasts designed to inform long term planning decisions and are not relevant to pricing decisions made by individual distributor-retailers. QWC advised that it is questionable whether there is any correlation between these macro demand forecasts and hydrological assessments and localised demand forecasts developed by retailers. QWC further advised that localised demand forecasts would be more relevant in assessing the impact of demand on the water distribution and sewerage networks.

Frontier noted that average SEQ water consumption in 2010 has been below 200 L/p/day. Frontier was unable to comment on the appropriateness of the assumed average use per person per day in 2010/11 given the lack of historical data provided by councils to the entities.

The Authority notes that QWC subsequently provided 2009/10 data showing average residential use of 154 L/p/day across QUU's service area. QWC considered that relatively lower levels of residential usage per person per day in the more rural areas of Lockey Valley, Somerset and Scenic Rim would be expected given their rural nature and as a higher proportion of residential properties have large water tanks, which would be their first water source before drawing on the reticulated supply.

The Authority also notes that QUU's media releases in late June 2010 calculate the average residential bill based on average household use of 149kl/year. This level of usage translates into residential use of 173 L/p/day (assuming 2.36 persons per household) which is broadly consistent with a weighted average of the assumptions in 2010/11 (in Table 6).

Frontier noted that QUU have included a gradual increase ("bounceback") in demand (Table 6). Frontier considers that this is consistent with expectations given the history of water restrictions. The period between 2008 and 2010 captures a period of relative easing of water restrictions and subsequently demand for this period may already include high levels of bounceback. Permanent water restrictions were introduced on 1 December 2009. For the period 2011-13, permanent restrictions are assumed to be maintained and Frontier expects bounceback to be less pronounced. The installation of permanent water saving devices is relevant in this regard.

Nonetheless, Frontier noted that the rate at which customers respond to permanent water restrictions given the structural efficiencies now in place will be a key factor in water demand over the period.

Frontier also noted that QUU had not applied price elasticity of demand estimates to volume forecasts. Frontier considered that elasticity estimates were relevant to QUU, as discretionary use will increase as restrictions remain relatively relaxed. As a result, customers will be more responsive to price increases, although the absolute price elasticity will remain quite low. Based on a number of studies of urban water use, Frontier noted a range of potential elasticity estimates ranging from 0.05 to 0.51.[5]

However, Frontier noted that QUU's prices in 2011/12 and 2012/13 do not represent actual price paths and it is methodologically unsound to apply price elasticity estimates in the absence of actual proposed prices. The Authority notes the wide range of estimates for elasticity, and considers that an estimate relevant to SEQ should be developed by entities for projections of demand.

In view of the above considerations, Frontier recommended QUU's forecast residential volumes only be amended to reflect the amended growth rates for connections. Frontier also recommended that QUU's demand forecasts be adjusted for price elasticity of demand in future reviews once forecast prices and price components are provided along with corresponding demand estimates.

[5] A price elasticity of 0.05 means that for every 1% increase in price demand falls by 0.05%.

**Table 8: QUU Residential Water Demand (Amended) (ML/year)**

| | *2008/2009* | *2009/2010* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Brisbane | 53,095 | 58,897 | 59,926 | 62,640 | 65,427 |
| Ipswich | - | - | 10,180 | 10,945 | 11,759 |
| Lockyer Valley | - | - | 1,049 | 1,113 | 1,180 |
| Somerset | - | - | 667 | 704 | 742 |
| Scenic Rim | - | - | 841 | 890 | 941 |
| QUU (Frontier) | - | - | 72,663 | 76,292 | 80,049 |
| QUU (QUU) | - | - | 72,647 | 75,477 | 78,356 |
| **Difference** | | | **16** | **815** | **1,693** |

*Source Frontier (2010).*

The Authority accepts Frontier's recommendations for 2010/11. The Authority also considers that tariff structure will be a very significant determinant of demand. No changes in tariff structure were made in 2010/11 pending the development of approved pricing principles.

The Authority notes that QUU's estimates of residential water volumes are broadly confirmed by Frontier's analysis, with Frontier increasing volumes by only 0.02% in 2010/11 up to 2.16% in 2012/13. The Authority considers that Frontier's approach, and the use of the latest billing data, represents the best available estimate of demand and therefore has accepted Frontier's estimates in its review of capital and operating expenditure.

**The Authority accepts Frontier's residential water demand estimates.**

Wastewater

QUU's estimates of residential wastewater connections are shown in Table 9 below.

**Table 9: QUU Wastewater Connections – residential**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Brisbane | 389,215 | 393,107 | 397,038 |
| Ipswich | 44,112 | 44,553 | 44,999 |
| Lockyer Valley | 4,200 | 4,242 | 4,284 |
| Somerset | 2,991 | 3,036 | 3,081 |
| Scenic Rim | 3,549 | 3,602 | 3,656 |
| **QUU** | **444,067** | **448,540** | **453,059** |

*Source QUU (2010)*

In line with the approach used in its analysis of residential water usage, Frontier adjusted residential wastewater connection forecasts in 2010/11 to reflect actual billing data for the September 2010 quarter and adjusted wastewater connections growth to reflect the PIFU growth forecasts used with water connections (Table 10).

Frontier noted that QUU is not proposing to introduce volumetric charges for wastewater and therefore there is no need for QUU to produce wastewater volumetric forecasts at this stage.

Frontier's adjustments result in an increase of 3.1% for 2010/11, 4.2% in 2011/12 and 5.2% in 2012/13.

**Table 10: QUU Wastewater Connections Amended – residential**

| | ***2010/11*** | ***2011/12*** | ***2012/13*** |
|---|---|---|---|
| Brisbane | 390,486 | 396,836 | 403,289 |
| Ipswich | 56,536 | 59,099 | 61,777 |
| Lockyer Valley | 4,131 | 4,260 | 4,393 |
| Somerset | 2,818 | 2,891 | 2,966 |
| Scenic Rim | 3,975 | 4,089 | 4,206 |
| QUU (Frontier) | 457,945 | 467,174 | 476,631 |
| QUU (QUU) | 444,067 | 448,540 | 453,059 |
| **Difference** | **13,878** | **18,634** | **23,572** |

*Source Frontier (2010)*

**The Authority accepts Frontier's residential wastewater demand estimates.**

Non-residential and Trade waste

Frontier noted that QUU have forecast non-residential connections and trade waste connections and volume over the three year interim period to grow at an annual compound rate of 1% per annum.

Frontier stated that it did not consider it appropriate to apply a blanket assumption regarding growth rates for different activities to non-residential and trade waste. Ideally, Frontier recommend that demand forecasts associated with each activity should reflect the historical trends specific to that activity and any expectations regarding future events that impact specifically on that activity or service.

Unlike water connections, Frontier was unable to obtain historical data from alternative sources. While Frontier considered that the growth rate proposed was not appropriate, it did not have access to the data needed to generate an alternative estimate despite requesting this from QUU.[6]

[6] QUU subsequently provided updated billing data for non-residential connections for Ipswich, this data has been used by the Authority in its calculations.

Recycled Water

Frontier noted that QUU provided forecasts for recycled water volumes for Brisbane and Ipswich. These arise from supply to approved water carriers from tanker filling stations and direct connections for non-residential use. Frontier commented that QUU have adopted a blanket growth assumption of one percent per annum over both sets of forecasts. As for trade waste, individual forecasts should reference circumstances specific to the service and location under consideration.

In the absence of historical data or alternative sources of data, Frontier is unable to provide alternative forecasts to those proposed by QUU.

**The Authority accepts QUU's forecasts but requires QUU to develop more specific short-term forecasts for trade waste customers and recycled water for future years.**

Summary

Demand estimates are an essential component of economic regulation. 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 of data from the councils. This was evident as QUU was only able to provide historical water connection information for Brisbane. Frontier requested historical information from QUU and, in response to this request, QUU noted that no further information was available from councils.

The Authority has adjusted QUU's residential connections for water and wastewater and residential volumes for water to reflect updated billing data and PIFU forecasts. Nonetheless, the Authority notes that these (revised) estimates broadly confirm QUU's estimates for 2010/11, with differences only becoming material in later years.

The Authority considers that, prior to the next price monitoring period, QUU should document its approach to forecasting demand for all purposes, and establish procedures and protocols for the collection and collation of data, including:

(a) connections for residential and non residential water users;

(b) connections for wastewater customers (residential, non-residential, recycled water customers and trade waste customers); and

(c) volumetric consumption for residential and non-residential customers for potable water, wastewater, recycled water and trade waste.

The Authority also considers that QUU should also take into account the response of consumers to increasing prices (that is, estimate the elasticity of demand) when estimating future consumption.

## 1.5 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 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.

The Authority engaged SKM to review the method used by the entities to apportion the advised RAB to each deemed category and its implementation.

QUU's Submission

QUU has apportioned its initial RAB of $3.94 billion to each deemed category (see Table 11). QUU has used the pro rata approach under which the advised RAB is apportioned to existing asset values on the basis of their audited values.

QUU has also apportioned the $9.48 million initial RAB for the Esk Gatton Laidley Water Board, 80% to the Lockyer Valley and 20% to Somerset.

**Table 11: QUU RAB as at 1 July 2008 ($m)**

| | ***Water*** | ***Wastewater*** | ***RAB*** |
|---|---|---|---|
| Brisbane City Council | 1,377.33 | 2,039.52 | 3,416.85 |
| Ipswich City Council | 166.26 | 262.55 | 428.81 |
| Scenic Rim Regional Council | 20.45 | 16.96 | 37.41 |
| Somerset Regional Council | 17.35 | 12.35 | 29.70 |
| Lockyer Valley Regional Council | 24.65 | 7.63 | 32.28 |
| **QUU** | **1,606.04** | **2,339.01** | **3,945.05** |

Authority Analysis

SKM noted that the total RAB value in QUU's submission reconciles with the Ministers advised RAB. However, there were differences in the asset values for each geographic area arising from:

(a) QUU allocating the $4.02 million value of the Brisbane billing system (as at 1 July 2008) across all geographic areas on the basis of properties serviced.

The Authority considers this to be reasonable as it reflects the expected use of the billing system. The Authority also notes that it affects the council RABs by less than 0.25% and is therefore not material;

(b) QUU allocating the $9.48 million initial RAB for the Esk Gatton Laidley Water Board, 80% to the Lockyer Valley and 20% to Somerset. QUU subsequently advised that this allocation reflects the Water Board's advice that the apportionment of assets is most closely aligned with consumption, and has been agreed to by the two councils.

SKM verified that the RABs for each council area were apportioned to asset classes based on their audited values. This approach was recommended in the Authority's Final Report on the *SEQ Interim Price Monitoring Framework* and *Information Requirements for 2010/11* and endorsed by Government in the Ministerial Direction.

The Authority has therefore accepted QUU's apportionment of the Minister's advised RAB. The Authority also accepts the allocation of assets as adjusted for the billing system and, in the absence of any further details to suggest otherwise, accepts the allocation of the Esk Gatton Laidley Water Board to Lockyer Valley and Somerset as agreed between the relevant councils.

**The Authority has accepted QUU's apportionment of the Minister's advised RAB and the adjustments proposed by QUU.**

## 1.6 Capital Expenditure

*Capital Expenditure from 1 July 2008 to 30 June 2010*

The Direction requires the Authority to accept as prudent and efficient, actual capital expenditure (excluding establishment costs) as included in councils' financial accounts from 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 from 1 July 2008 to 30 June 2010.

QUU submission

In its submission, QUU stated that the capital expenditure for 2008/09 was $117.7 million and $211.0 million in 2009/10.

QUU also noted that the costs associated with the establishment of the distributor-retailer authorities under the water reform models are to be carried forward as part of the RAB provided they meet eligible purpose criteria and verification requirements. QUU estimated its establishment costs at $43 million. QUU noted that, as the data template did not specifically cater for the addition of establishment costs into the 1 July 2010 opening RAB, QUU have added these costs as capital expenditure for 2009/10.

Authority's Analysis

SKM noted that QUU allocated capital expenditure to only two of the seven categories (drinking water and wastewater via sewer). SKM requested this information from QUU and, in response, QUU noted that it is not able to populate this section of the template as councils did not previously collect this data. SKM recommended that, where these services are offered in future years, QUU should collect information within the above categories.

SKM were asked to compare actual capital costs for the 2008/09 and 2009/10 financial years to council's financial accounts provided by QUU. The supporting information provided by QUU set out capital expenditure and donated assets separately. SKM verified the 2008/09 capital expenditure on this basis.

The Authority notes that 2009/10 capital expenditure cannot be verified against councils' financial accounts as supporting information based on 2009/10 audited accounts is yet to be provided by the entities. QUU suggested that it provide the 2009/10 audited capital expenditure information to the Authority with its responses to the draft report, early in 2011.

Further, allowable establishment costs have not been advised by the Minister for Natural Resources, Mines and Energy and Minister for Trade.

QUU excluded contributed, donated and gifted assets (contributed assets) from its total capital expenditure for 2008/09 and 2009/10 and included a switch in the data template to allow for

their inclusion if required. The Authority adjusted QUU's estimates for their inclusion (Table 12).

**Table 12: QUU adjusted 2008/09 and 2009/10 capital expenditure ($m)**

| | ***2008/09*** | ***2009/10*** |
|---|---|---|
| Capital expenditure (QUU) | 117.7 | 211.0 |
| Capital expenditure (QUU + contributed assets) | 182.4 | 268.3 |
| Difference | 64.7 | 57.3 |

*Source QUU (2010) and QCA calculations. Subsequent information provided to the Authority indicates that at the time of price setting, QUU estimated 2008/09 capex as $183 million and 2009/10 capex as $225 million. Costs submitted to the Authority reflect more recent information available at the time of making QUU's submission.*

The Authority will further review QUU's past capital expenditure once audited information is available and establishment costs have been finalised by the Minister. As a result, the initial RAB as at 1 July 2010 should be viewed as an interim RAB.

**The Authority will review past capital expenditure claimed by QUU once audited information is available and establishment costs have been approved by the Minister.**

*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 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.

Stakeholder submissions

The SEQ Water Grid Manager noted in its submission that the entities will be required to develop a drinking water quality management plan consistent with the SEQ water grid quality management plan developed by the SEQ Water Grid Manager.

In its submission, QUU proposed a capital works program of $883 million over 3 years, of which water accounts for $186 million and wastewater $697 million[7].

Supporting information provided by QUU identified that its forecast of $114.9 million of capital expenditure to be commissioned in 2010/11 was derived from $268.96 million of capital expenditure to be incurred in 2010/11.[8]

(a) Proposed Capital Expenditure

QUU assigned the increase in capital works to the following cost drivers: growth, renewal, improvement and compliance (Table 13).

[7] All figures in this section are in nominal terms unless otherwise stated.

[8] Supporting information indicates that QUU estimated that $323.5 million of capital expenditure would be incurred in 2010/11 at the time of price setting. The costs submitted to the Authority reflect more recent information available to QUU at the time of making its submission.

**Table 13: Forecast Capital Expenditure Water and Wastewater ($m)**

| | *2010/11* | *2011/12* | *2012/13* | *Total* |
|---|---|---|---|---|
| Growth | 21.0 | 230.0 | 302.6 | 553.6 |
| Renewal | 71.8 | 87.7 | 98.1 | 257.6 |
| Improvement | 13.8 | 18.8 | 11.8 | 44.5 |
| Compliance | 8.3 | 5.5 | 13.5 | 27.3 |
| **Total** | **114.9** | **342.0** | **426.1** | **883.0** |
| **Comprising** | | | | |
| **Water** | **40.6** | **70.3** | **74.8** | **185.7** |
| **Wastewater** | **74.3** | **271.8** | **351.3** | **697.3** |

*Note Capital expenditure is presented here on an as commissioned' basis as per QUU's submission. Commissioned assets are able to contribute productive capacity to the system. Source QUU (2010) data template*

The water and wastewater costs related to each of QUU's five geographic areas are detailed in Tables 14 and 15.

**Table 14: Capex for Water by Geographic Area ($m)**

| | *2010/11* | *2011/12* | *2012/13* | *Total* |
|---|---|---|---|---|
| Brisbane | 26.1 | 42.5 | 45.1 | 113.7 |
| Ipswich | 11.2 | 19.9 | 15.6 | 46.6 |
| Lockyer Valley | 0.6 | 0.8 | 3.1 | 4.6 |
| Scenic Rim | 2.2 | 6.2 | 10.2 | 18.5 |
| Somerset | 0.5 | 0.9 | 0.9 | 2.3 |
| **Total** | **40.6** | **70.3** | **74.8** | **185.7** |

*Source QUU (2010) data template*

**Table 15: Capex for Wastewater by Geographic Area ($m)**

| | *2010/11* | *2011/12* | *2012/13* | *Total* |
|---|---|---|---|---|
| Brisbane | 54.6 | 70.0 | 177.2 | 301.8 |
| Ipswich | 15.0 | 171.7 | 131.0 | 317.8 |
| Lockyer Valley | 0.6 | 21.3 | 0.8 | 22.8 |
| Scenic Rim | 3.3 | 6.8 | 29.0 | 39.2 |
| Somerset | 0.7 | 1.8 | 13.2 | 15.8 |
| **Total** | **74.3** | **271.8** | **351.3** | **697.3** |

*Source QUU (2010) data template*

In its submission, QUU noted that the majority of the works across the region will be in wastewater transport and treatment assets.

(b) Service Standards

In its submission, QUU indicated that it operates under the customer service standards prepared by its five shareholding councils in compliance with the *Water Supply (Safety and Reliability) Act 2008*. Further, QUU noted that there is considerable variation in customer service standards across the state, across SEQ, and across QUU's operational areas.

QUU indicated that a key element in its decision making on future operating, maintenance and capital expenditure is ensuring that all of its customers receive at least the minimum agreed and regulated service standards. The Office of Water Supply Regulator (DERM) approves SAMPs, SLMPs and drinking water plans and customer service standards.

(c) Capital Planning

Each of the councils which formed QUU have addressed their statutory requirements in a number of documents, including a Strategic Asset Management Plan (SAMP), a System Leakage Management Plan (SLMP), a Drinking Water Quality Management Plan (drinking water plan) and a Customer Service Standards as required by the *Water Supply (Safety and Reliability) Act 2008.*

Under transitional arrangements, the *South East Queensland Water (Distribution and Retail Restructuring) Act 2009* transfers SAMPs, SLMPs and existing drinking water plans developed by its five shareholding councils to QUU until such time as QUU develops an approved drinking water plan (due by 1 July 2011) and an endorsed Water Netserv Plan (due by 1 July 2013). The Water Netserv Plan must have regard to planning documents included in the South East Queensland Regional Plan 2009-2031 and the planning assumptions made by shareholding councils for QUU's operating area.

QUU identified its approach to identifying and prioritising capital projects. This involves QUU undertaking a systematic process which includes system planning, master planning, feasibility studies, preliminary design, a 30 year capital investment plan and a more detailed five year 'slice' of the 30 year plan taken forward for detailed budget deliberations. Annual prioritisation ensures that limited capital funds are directed towards the highest priority works.

Further, for projects with costs greater than $5 million, QUU proposed that a gateway review approach be taken. This approach intends to provide independent support to projects by having peers examine them at critical stages in their lifecycle.

In subsequent information provided to the Authority, QUU identified that the adoption of these processes in 2010/11 led to a reduction in the capital program of $454 million as incurred provided by participating councils to the current program of $268.9 million as incurred, and $114.9 million as commissioned. This equates to a reduction of $185.1 million as incurred. These savings are already incorporated in their costs as submitted to the Authority. QUU estimates that this reduction in the capital expenditure program reduced the total costs of supply in 2010/11 by around $8.1 million.

Authority's Analysis

The Authority engaged SKM and Halcrow to review the adequacy of data provided by QUU and the prudency and efficiency of the proposed capital expenditure, within the framework outlined in the Authority's *Final Report SEQ Interim Price Monitoring Framework*. In accordance with this framework, SKM and Halcrow reviewed the cost drivers of the capital

expenditure in detail and the need for, scope and standard of the works when assessing the prudency and efficiency of the proposed capital works.

(a) Adequacy of Capital Expenditure Data

As noted previously, QUU excluded contributed, donated and gifted assets from its forecast capital expenditure (but included capital expenditure to be funded by cash contributions). Total capital expenditure should include contributed, donated and gifted assets and those funded by cash contributions (Table 16). Subsequent adjustments to ensure the appropriate treatment of contributed assets are discussed separately below.

**Table 16: Revised Capital Expenditure Profile including contributed assets* ($m)**

| | ***2010/2011*** | ***2011/2012*** | ***2012/13*** | ***Total*** |
|---|---|---|---|---|
| Capex (QUU) | 114.9 | 342.0 | 426.1 | 883.0 |
| Capex (QUU + contributed assets*) | 169.5 | 432.5 | 524.3 | 1,126.3 |
| Difference | 54.6 | 90.5 | 98.3 | 243.3 |

*Source QUU (2010) and QCA calculations.* includes contributed, donated and gifted assets.*

QUU has indexed 2010/11 capital costs on the basis of a forecast CPI of 2.5%. The Authority notes SKM's finding that CPI is a conservative index. The Authority acknowledges that there are options for the indexing of asset values ranging from a broad-based inflation index such as CPI to a specific industry input index or combination of input indices.

Industry input indices should provide a more accurate estimate of replacement cost-based asset values and could provide a reasonable substitute for a full revaluation. However, such indices may be subject to significant step changes over short periods, and would be expected to rise and fall in line with market conditions. This could lead to significant price variations within and between regulatory periods.

Until a more appropriate index is established which is particularly relevant to the entities, the Authority considers that QUU's use of CPI to index capital expenditure is reasonable and notes that any variations subsequently found between the forecast amount and the actual amount can be taken into account at the next price monitoring review.

SKM also noted that QUU allocated capital expenditure to only two of the seven categories (drinking water and wastewater via sewer and that costs associated with recycled water are included within the "wastewater via sewer" category). SKM recommended recycled water costs be separated out (despite the difficulties in doing so) as QUU has a recycled water network and there may be an alternative pricing strategy for the provision of recycled water in the future. The Authority notes SKM's comment, and acknowledges that pricing principles are yet to be developed and that disaggregated information on costs will inform this process.

As QUU only provided disaggregated costs for two of the seven categories, the Authority notes that it is not possible at this time to develop a MAR at a more disaggregated level than for water and for wastewater.

(b) Service Standards

The Authority is not reviewing service standards as part of this price monitoring review. The Authority has accepted the service standards provided by the entities so long as they have been approved by other relevant agencies.

As noted, there is considerable variation in customer service standards across QUU's operational area. SKM noted that this is expected to continue until the release of a water and wastewater customer code which will provide minimum guaranteed service standards for the customers of the three distributor-retailers, under the *South East Queensland Water (Distribution and Retail Restructuring) Act 2009.*

SKM noted that, in addition to its customer service standards, QUU also has asset standards (such as pressure, fire flows and storage requirements), as outlined in *Queensland Urban Utilities' Water & Sewerage Planning Guidelines (2010).* This document outlines the water network and wastewater network planning parameters for Brisbane.

Based on further information from QUU, SKM noted that these standards are likely to be consistent for Brisbane and Ipswich projects, but not for the three other areas. However, QUU noted that work is underway to revise the current Brisbane based planning guidelines to reflect QUU's entire service area. Where service standards are the driver for increased capital expenditure, SKM has reviewed this against the documentation provided by QUU to assess the prudency and efficiency of the works.

(c) Capital Planning

QUU demand forecasts for pricing and operating costs and those for capital planning are done separately. While both look at historical trends and project forward official growth forecasts and anticipated water use trends, there are considerable differences in some cases. In assessing the prudency of the sampled projects, the consultant assessed each project individually against planning documents. In other words, the consultant accepted the demand forecasts used. This is not unreasonable on this occasion.

SKM commented that the Brisbane and Ipswich districts have well defined policies and procedures which are in line with good industry practice. SKM noted that, while this may not be the case for other districts, work is currently underway by QUU to review these policies and procedures.

From the documents reviewed for the representative sample, SKM concluded that documentation was appropriate for the large single projects (e.g. master plans, feasibility studies business cases, etc). However, documentation was less comprehensive for rolling programs. SKM noted that some projects and programs were initiated under the previous council arrangements, and may not have required the same level of documentation at the time.

The key deficiencies identified for rolling programs include:

(a) documentation of project scope is limited for future years. This may be due to the program not yet being fully developed, However, without the information provided, SKM found difficulty in comparing project estimates with benchmark prices;

(b) documentation of project need and justification is limited;

(c) documentation of alternatives considered, and reasons for selecting the recommended option, is limited; and

(d) cost estimate basis and accuracy is generally not discussed.

SKM noted that to ensure prudency and efficiency of the major wastewater projects that are planned to be implemented, QUU initiated a review which made a number of recommendations. These included:

(a) 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;

(b) a summary document be prepared for identified major projects so as to develop a standardised reporting

(c) an implementation strategy to be developed for each major project to assist in ensuring the deliverability of the project in the proposed timeframe;

(d) establishment of a benchmark for determining the prudency of a project based on design flows and projected growth; and

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

While agreeing with the recommendations of this review, SKM further recommended that QUU develop a process for considering synergies between the districts and, where possible, that these synergies be developed. Relevant initiatives could include combined programs of work or optimised infrastructure between the five districts. SKM recommended that, where relevant, master planning studies, feasibilities studies and network models should take into consideration opportunities and risks in neighbouring areas, to allow the development of an integrated and optimised network.

The Authority agrees with SKM's findings and recommendations with regards to the policies and procedures followed by QUU. In particular, the Authority noted that QUU has commenced the process of taking into account a regional perspective (for example see below the Modified Regional Approach to the upgrade of the Goodna sewerage treatment plant) and recommends that this be comprehensively applied when developing future capital works programs.

#### (d) 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).

The Authority notes that QUU's submission to the Authority already incorporates reductions of around $185.1 million in the capital expenditure program (as incurred) for 2010/11.

In assessing the cost efficiency of the sampled projects, SKM used published unit rates from Rawlinsons, available unit rates from SEQ water entities and also other water utilities, previous project experience on similar projects and quotes from various suppliers. Some of these unit rates are confidential and are therefore not published in this report. Unit rates identified or calculated from the supporting data provided by QUU were compared to a range of rates from the above sources. If the rate was within 30% of the benchmark identified for a similar type, length and diameter or pipe, or similar type of project, SKM considered the expenditure to be cost efficient.

SKM noted that there are a number of factors that can significantly affect the cost of the projects including the project location (e.g. highly urbanised areas are significantly more expensive than greenfield sites), material types (e.g. different pipeline materials such as PVC and MICL pipe),

the fittings and fixtures required (e.g. many connections and valves versus only a few), and geotechnical conditions (e.g. rock versus sandy soils).

Having regard to the above sources of variation, and the time available for this review, SKM considered that variation above 30% required further detailed evaluation. The Authority notes that contingency allowances can vary from 5 to 40% depending on the stage of a project's planning (Evans and Peck, 2009).

The Authority accepts SKM's approach for this first review but notes that it will be seeking to refine this range over the interim period wherever possible. The Authority also notes that, in previous reviews of infrastructure charges, 25% was recommended to the Authority by another consultant.

The sample chosen for review of prudency and efficiency includes the projects which account for at least ten per cent of the overall capital project spend and an additional medium value project for each of the geographic areas. For QUU, this resulted in a sample of 15 projects for review which accounted for 27% of QUU's total capital expenditure program (as submitted) over the three year interim period. A range of projects across councils by size and over the interim period was chosen to test the application of policies and procedures across a variety of projects.

The Authority did not limit its sample to expenditure proposed to be commissioned in 2010/11 in order to signal its view of the prudency and efficiency of projects currently underway and due to be commissioned in later years.

The list of capital expenditure programs reviewed in detail for 2010/11 is shown in table 17 (with expenditure shown as incurred).

**Table 17: Capital expenditure programs reviewed ($m)**

| *Project* | *Activity* | *2010/11* | *Total 2010/11-2012/13* |
|---|---|---|---|
| Ipswich Goodna STP Upgrade | Wastewater Treatment | 55.9 | 136.8 |
| Brisbane Bulimba Creek Trunk Sewer Upgrade | Wastewater Transport | 13 | 51.9 |
| Brisbane Burst Mains Renewal Program | Water Project | 6.8 | 27.2 |
| Lockyer Valley Eastern Regional STP Upgrade | Wastewater Treatment | 3 | 18.2 |
| Somerset Fernvale STP Implementation | Wastewater Treatment | 5 | 17.8 |
| Scenic Rim – Bromelton STP | Wastewater Treatment | - | 16.7 |
| Ipswich Distribution Water Main Minor Enhance Program | Water Project | 0.11 | 6.9 |
| Scenic Rim Upgrade Walker Drive Reservoir Kooralybn | Water Project | - | 2.6 |
| Brisbane Lang Parade Wet Weather Pump Station | Wastewater Transport | - | 2.1 |
| Lockyer Valley Water Reticulation Mains Improvement Program | Water Project | 0.1 | 1.9 |
| Somerset Water Reticulation Mains Renewal Program | Water Project | 0.3 | 1.3 |
| Lockyer Valley Water Reticulation Mains Renewals Program | Water Project | 0.16 | 1.12 |
| Ipswich Sewerage Rising Mains Renewal Program | Wastewater Project | 0.6 | 0.9 |
| Somerset Wastewater Reticulation Mains Renewal Program | Wastewater Transport | 0.3 | 0.8 |
| Scenic Rim Brookes Drive Reservoir | Water Project | 0.2 | 0.2 |

*Source QUU supporting information. Capital expenditure shown in nominal dollars as incurred.*

SKM/Halcrow found that most, but not all, of QUU's forecast expenditure in 2010/11 was prudent and efficient. For much of the expenditure in 2011/12 and 2012/13, insufficient data (and the early stage of planning) meant that the consultants were unable to come to a conclusion on prudency or efficiency. The consultant's conclusions and the Authority's response with respect to the prudency and efficiency of the proposed capital expenditure programs is detailed below on a project by project basis.

(i) Ipswich Goodna STP Upgrade

In its submission, QUU proposed total expenditure of $136.8 million for the Ipswich Goodna STP upgrade over the 2010/11-2012/13 period. The total cost of the Ipswich Goodna STP upgrade is $206.9 million over the interim period and beyond (see Table 18).

**Table 18: Ipswich Goodna proposed Expenditure Profile ($m)**

| Project | 2010-11 | 2011-12 | 2012-13 | 2013-2014 | 2014-2015 | Subsequent | Total |
|---|---|---|---|---|---|---|---|
| Goodna Stage 4a | 55.9 | 74.1 | - | - | - | - | 130.0 |
| Goodna Stage 4b | - | - | 6.8 | 30.1 | - | - | 36.9 |
| Goodna Stage 4c | - | - | - | - | 1.6 | 38.4 | 40.0 |
| Total | 55.9 | 74.1 | 6.8 | 30.1 | 1.6 | 38.4 | 206.9 |

*Source Halcrow (2010)*
*Note Halcrow's review focuses on expenditure of $136.8 million over the interim period to 2012/13.*

QUU proposed that the Ipswich Goodna STP requires upgrading to meet growth. Current STP design capacity is 65,000 equivalent persons (EP) while forecast load by 2012 is assessed to be 77,000 EP. This represents a growth rate of 5.8% pa (compound annual growth rate). The Authority notes that this compares with 4.5% PIFU forecast of dwellings in the Ipswich region. The planned upgrade is expected to increase plant capacity by 25,000 EP, resulting in a total capacity of 90,000.

Halcrow noted that following QUU's submission to the Authority, an integrated regional planning process initiated by QUU identified a superior regional approach to providing sewerage services. This new Modified Regional Approach, which QUU has adopted, amends the proposed upgrade of Goodna to:

(a) Phase 1 – construction of Goodna STP 4a in conjunction with optimised use of other existing infrastructure; construction of Goodna STP Stages 4b and 4c will not proceed; and

(b) Phase 2 – other infrastructure works (Wacol Catchment) to be implemented from 2014 onwards. Costs associated with this phase were not provided (or reviewed) as it lies outside the forecast period.

The cost of the Modified Regional Approach is approximately $129.7 million and the revised profile is shown in Table 19. As a detailed breakdown of costs was not available from QUU, Halcrow recommended that the proposed expenditure be incorporated at a uniform rate over the next three years. The Authority has therefore proceeded on the basis that the STP is commissioned in the last year of expenditure.

**Table 19: Revised Ipswich Goodna Expenditure Profile ($m)**

| ***Project*** | ***2010-11*** | ***2011-12*** | ***2012-13*** | ***2013-14*** | ***Total*** |
|---|---|---|---|---|---|
| Goodna Stage 4a | 42.2 | 43.2 | 44.3 | - | 129.7 |

*Source Halcrow (2010)*

With regards to prudency, Halcrow recommended that the Modified Regional Approach to upgrade the Ipswich Goodna STP is prudent, based on the key driver of growth. According to the Population Review Report, growth in the region is expected to significantly increase the load on the Goodna STP from the 2008 level of 54,000 EP to the expected load of 208,000 EP by 2031 (an annual growth rate of 6%).

This growth is forecast to occur in stages with 123,000 EP by 2016 and 186,000 EP by 2026. Halcrow noted that raw data for the growth predictions identified in the Population Review Report was sourced from the Catchment Population Appraisal Addendum (January 2010), which in turn references the South East Queensland Regional Plan 2009-2031. Halcrow noted that the drivers appear to be adequately supported, with detailed assessment of the growth projections having been completed and made available.

Halcrow considered that QUU has demonstrated a well-documented and justified development of options and has engaged independent consultants to support and review proposals at key stages of option development. Goodna STP is an example of where QUU used its gateway review process as appropriate peer reviews are undertaken at milestone stages to ensure a cost-effective outcome.

With regards to efficiency, Halcrow noted that the proposed costs have not been provided in sufficient detail to enable a detailed assessment of efficiency, however, the equivalent unit rate cost of approximately $4,400 per EP is considered to be generally consistent with the estimated and actual costs of other similar works. Halcrow also noted that the Modified Regional Approach has led to a reduction of approximately 7.5% in the (nominal) cost of the works proposed to be undertaken during the interim price monitoring period.

The Authority accepts Halcrow's finding that the Modified Regional Approach to upgrade the Ipswich Goodna STP is prudent and efficient. However, the Authority considers that QUU should provide a detailed breakdown of costs associated with this upgrade to ensure detailed assessment of efficiency is conducted in future reviews.

Further, the Authority considers the expenditure costs advised by QUU in its submission to the Authority for the Ipswich Goodna STP be replaced with the revised profile in Table 19 above and be taken into account for price monitoring purposes. This adjustment does not affect the commissioned expenditure relevant to the RAB in 2010/11.

(ii) Brisbane Bulimba Creek Trunk Sewer Upgrade

The Bulimba Creek Trunk Sewer Upgrade (Stage 1) includes the installation of a tunnelled gravity augmentation sewer, which will consist of a vitrified clay pipe, running approximately parallel to the existing trunk sewer. The construction method will be predominantly micro-tunnelling with trenched branch and cross connections.

The capital expenditure is proposed to be $52 million over 2010/11-2012/13 (see Table 20).

**Table 20: Bulimba Creek Trunk Sewer Upgrade proposed Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Bulimba Creek | 13.0 | 27.7 | 11.2 | 51.9 |

*Source SKM (2010)*

SKM considered that this project is prudent as under current hydraulic loads, both recorded and predicted overflows are occurring from Bulimba Creek Trunk Sewer between Padstow Road and Coora Street (Stage 1) during wet weather. These overflows are occurring at levels that could compromise regulatory obligations administered by the Queensland EPA. Other potential impacts include creek contamination, public health, access restrictions and potential community discontent.

SKM noted that there were a number of documents provided as part of the submission that imply that this project has been well considered. These documents include a strategic study, feasibility study and business case report.

With regards to efficiency, SKM noted that Brisbane Water have utilised milestone review processes (Gateway reviews) which include cost estimates at relevant milestones. Brisbane Water has completed other comparable tunnelling projects (Woolloongabba area) which provide good benchmarks. In addition, the provision of Review Reports by consultants provides independent assessment of the costs. Based on the above SKM considered the project costs to be reasonable. However, SKM noted that works of this form (tunnelling) have site specific issues which can significantly affect the cost.

SKM also commented that the project should be deliverable over the three year advised timeframe.

The Authority accepts SKM's findings that the capital expenditure proposed for this project is prudent and efficient.

(iii) Brisbane Burst Mains Renewal Program (Rolling Program)

The capital expenditure is proposed to be $27 million over 2010/11 - 2012/13 (see Table 21).

**Table 21: Brisbane Burst Mains Renewal Program Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Brisbane Burst Mains | 6.8 | 9.9 | 10.5 | 27.2 |

*Source SKM (2010)*

The Brisbane Burst Mains Renewal Program involves the replacement of water mains with unacceptable probability of failure. Expenditure under the program also takes into account major future urban re-development. The program focuses on assets that are in poor condition, unable to be maintained and/or are under performing. These can be assets approaching the end of their lives, but also include assets that show sign of early failure.

SKM noted that this program replaces or rehabilitates existing infrastructure to ensure desired standards of service are achieved and is therefore prudent. SKM commented that without replacement, it is reasonable to expect that the burst frequency would increase. SKM stated that there appears to be a business case for the renewal program for 2010/11.

While details of the procurement policy were not provided, there was evidence that a tendering process occurred as a number of tendered schedule of rates were provided. On this basis, SKM noted that the expenditure is cost efficient for 2010/11 and also that the rehabilitation estimates are within an acceptable range of benchmarks identified by SKM.

However, for 2011/12 and beyond the cost escalation was not fully explained. SKM noted that no detail for the escalation was provided, only a general explanation of the process that was undertaken, which includes using pipe material and asset age data to predict failure rates. Without further information, it is expected that the increase in failure rate would be more gradual than the 30-50% expected increase assumed by QUU.

Based on the available information, SKM concluded that the capital expenditure for this project is prudent and efficient for 2010/11. However, there is insufficient information provided to demonstrate prudency and efficiency of future years.

Where this is the case, SKM has distinguished between projects where insufficient information is provided to demonstrate prudency and efficiency, but that the level of information is consistent with the stage of development and the emerging capabilities of the entities.

For these projects SKM considered a cautionary approach recommending that the expenditure remain in the forecast but be reviewed during future evaluations. SKM noted that if removed from the budget, this is likely to cause disruption to the provision of service delivery in the future. The inclusion of these costs provides the entities with the opportunity to undertake the appropriate preliminary works and produce sufficient supporting documentation.

For Brisbane Burst mains projects detailed information is not available for 2011/12 and 2012/13, but SKM considered that the level of information provided is consistent with the stage of development and should be further reviewed before approval.

The Authority accepts SKM's findings that the capital expenditure for 2010/11 is prudent and efficient and that the capital expenditure for future years should be further reviewed. It is not proposed to remove the 2011/12 and 2012/13 expenditure from the RAB at this stage. The Authority notes that such projects are likely to be reviewed as part of 2011/12 price monitoring review. At this time it is expected that the entities would have more substantial information available to determine prudency and efficiency.

(iv) Lockyer Valley East Sewerage Scheme

This project involves the upgrade of a sewage treatment plant at Gatton, servicing Plainland, Laidley and Forest Hill.

In its submission, QUU proposed expenditure of approximately $18 million over the 2010-13 period (see Table 22).

**Table 22: Lockyer Valley Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Lockyer Valley East Sewage Scheme | 3.0 | 15.2 | - | 18.2 |

*Source Halcrow (2010)*

Halcrow noted that the proposed capital expenditure is around $1.1 million lower than in supporting documentation. The reason for this discrepancy was not explained in the supporting documentation provided by QUU.

Subsequently, QUU advised Halcrow that the expenditure profile for this project has been revised slightly due to the deferred timing of the expenditure (see Table 23).

**Table 23: Lockyer Valley Revised Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Lockyer Valley East Sewage Scheme | 0.5 | 17.7 | - | 18.2 |

*Source Halcrow ( 2010)*

Halcrow considered that on the basis of growth and licence compliance requirements this project is prudent. Halcrow noted that there is growth in the catchment and some facilities are

currently running at or close to full capacity. Further, existing facilities are performing poorly and there are constraints on the ability to upgrade these facilities.

Halcrow commented that a review of the available information indicates that a sound and reasonable approach has been undertaken during the master planning phase of this project.

With respect to the current status of the project, QUU have advised that a further feasibility study has commenced and is due to be completed in December 2010. Documentation for approvals is to be lodged with the relevant agencies in December 2010/January 2011.

However, Halcrow noted that in the absence of such information, it is reasonable to expect that the project can be completed within the timeframe indicated by the expenditure profile included in the Interim Price Monitoring Return, although any delay to progress would compromise this achievement.

With regards to efficiency, Halcrow concluded that while a definitive statement on the efficiency of the project cannot be made at this early stage, the unit rate cost of approximately $3,700 per EP is considered to be generally consistent with the estimated and actual costs of other similar works.

The Authority accepts Halcrow's findings that the capital expenditure associated with this project is prudent and efficient and that the revised expenditure profile in Table 23 is taken into account for price monitoring purposes. This adjustment does not affect the commissioned expenditure relevant to the RAB in 2010/11.

(v) Somerset Fernvale Sewage Treatment Plan

Given the historical and projected population increase in Fernvale, QUU is proposing to construct a new plant to service a forecast additional 4,000 EP load.

QUU has proposed expenditure of approximately $17.8 million for the Somerset Fernvale STP (see Table 24).

**Table 24: Fernvale Sewage Treatment Plant proposed Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *2013-2014* | *Total* |
|---|---|---|---|---|---|
| Fernvale Treatment Plant | 5.0 | 7.1 | 5.2 | 0.5 | 17.8 |

*Source Halcrow (2010)*

Halcrow noted that these costs exclude the purchase cost associated with land required to enable construction of the new STP and the costs are therefore understated.

Halcrow also noted that in its submission, QUU lists responsive renewal costs that appear to be associated with the existing STP at Fernvale (see Table 25).

**Table 25: Fernvale Sewage Treatment Plant Responsive Renewal Program ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *2013-2014* | *2014-2015* | *Total* |
|---|---|---|---|---|---|---|
| Fernvale Treatment Plant | | .06 | - | .06 | .22 | 0.34 |

*Source Halcrow (2010)*

With regards to prudency, Halcrow concluded that the construction of the new STP at Fernvale is prudent on the basis of historic and predicted growth in the Fernvale community. While noting that the growth assumptions to 2010 used to underpin the construction of the new treatment plant are higher than the PIFU growth assumptions recommended by Frontier for the Somerset Regional Council of 2.6%.

QUU also advised that a secondary driver is compliance with key environmental licence conditions, noting that the existing plant regularly exceeds licence limits for effluent release quantity.

With regards to the responsive renewal program, Halcrow considered this also to be prudent as it is required to meet statutory requirements (health and safety) over the remaining life of the existing plant.

With regards to efficiency, Halcrow concluded that the proposed expenditure for the new STP is efficient as the adopted solution has been selected through a robust planning process of consultation, investigation, option development and option evaluation. Halcrow noted that the cost estimate also appears to be reasonable and includes a contingency allowance of 25% (reasonable at this stage of project development) and an engineering design and project management allowance of 15%.

QUU has proposed the upgrade works to start in 2010/11, and expects completion in 2013/14. Halcrow noted that based on the information available, the proposed timing appears fair, and should be deliverable over the period, providing land acquisition of the chosen site presents no unexpected delays.

The Authority accepts Halcrow's finding that the cost associated with the Somerset Fernvale STP upgrade is prudent and efficient and notes Halcrow's observation that the cost excludes land.

(vi) Bromelton (Scenic Rim) Regional Sewage Treatment Plant

In its submission QUU has proposed sewerage infrastructure upgrades in the Bromelton region (see Table 26).

QUU has proposed expenditure amounting to a total of approximately $16.7 million for the Bromelton Regional STP over the period 2010-2013, with an additional $4.7 million for land.

**Table 26: Bromelton Proposed Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Bromelton STP | - | 3.6 | 13.0 | 16.7 |
| Land | - | 1.0 | 3.7 | 4.7 |
| Total | - | 4.6 | 16.7 | 21.4 |

*Source Halcrow (2010)*

*Note The Authority notes that the value of land in the QUU template ($3.5 million) is different to the value in the commissioning model ($4.7 million).*

Halcrow noted an extreme variation between the $20.5 million cost detailed in the Authority's information templates from $102.8 million in a Cardno report for the Beaudesert Shire, for a STP in Bromelton Central.

Halrcow noted that limited information has been provided regarding the proposed sewerage infrastructure upgrades in the Bromelton region. Whilst the forecast population growth indicates that the project may be prudent, however, at the time of review no concept or detailed design proposal was provided to enable any meaningful review of prudency and efficiency. This information should be available for such a project at this stage of development.

Therefore the project is not prudent and efficient and should be removed from QUU's forecast expenditure. The Authority proposes to do so unless further justification is provided in the future. This adjustment does not affect the commissioned expenditure relevant to the RAB in 2010/11.

(vii) Ipswich Distribution Water Main Minor Enhance Program

This program includes some small water main enhancements and a number of larger projects in the Ipswich region. Most of the projects entail the replacement/upgrade of plant and water mains to augment the water distribution system, and to improve the security of water supply and fire flows.

The capital expenditure is proposed to be around $7 million over 2010/11 - 2012/13 (see Table 27).

**Table 27: Ipswich Distribution Water Main Minor Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Ipswich Rising Mains | 0.1 | 3.3 | 3.6 | 6.9 |

*Source SKM (2010)*

SKM noted that sufficient information has been provided to support the case for addressing growth and compliance with safety, operational and environmental standards.

In assessing the prudency of the project SKM noted that this project appears to be prudent with respect to appropriate processes based on the information provided.

However, while a sample of documents such as planning studies, project justifications and preliminary designs were provided for a number of these projects, SKM noted that there appeared to be a lack of rigour with respect to financial analysis. SKM suggested that the Minor Capital Project Submission documents should include cost estimates for alternative solutions

and an appropriate financial comparison to demonstrate that the preferred solution is not only technically efficient but is the most cost effective solution.

With respect to efficiency, SKM noted that where project scope documents were provided, these typically discussed technical issues, environmental impacts and risks as well as the cost of the selected solution. SKM considered this to be appropriate. SKM noted that according to QUU, the smaller projects in this program tend to be urgent in relation to priority, small in value, but material enough to be outside the scope of maintenance and operational activities.

SKM recommended that in such instances there should be some discussion justifying why those works should be capitalised. It may well be the case that some projects may be a mix of capital expenditure and operational expenditure given their nature.

Based on additional information from QUU, SKM noted that:

(a) WNI00288 and WNI00266 – Goodna Water Zone main and WNI00037 Altitude Valve Installation at Barallon Reservoir are no longer required following recent reviews by QUU and the value of the 2010/11 program should be reduced by $40,000. SKM's finding is predominantly based on an internal QUU memo dated 11 August 2010. This date falls before the provision of expenditure forecasts to the Authority (31 August 2010) but after the expenditure forecasts for price setting were developed (in early to mid 2010);

(b) the two large projects associated with the new Chuwar reservoir (associated water main works totalling $3.16 million) and the new Walloon reservoir (associated water main $0.71 million) will be delivered as separate projects in the future, and when this is done they should be removed from the program to avoid double counting; and

(c) the Springfield Elevated HLZ Tower West (WNI00251) project has been deferred as part of the current budget process as development in this part of the Springfield catchment and does not require the construction of this infrastructure at this point in time. SKM therefore recommended that the value of the 2011/12 program should be reduced by $384,000.

SKM considered that limited information is available regarding the projects which form the 2011/12 and 2012/13 program. However, SKM noted that the projects which form the program will be the subject of either a detailed Feasibility Study or Minor Capital Project Submission in the coming years.

In summary, SKM recommended that the future program requires further review. Based on information provided, the Goodna Water Zone Projects and Altitude Valve Installation at Barallon Reservoir are no longer required for 2010/11, and the WNI00251 Springfield Elevated HLZ Tower West should not be included in the future program. In addition, if the projects associated with the new Chuwar and Walloon reservoirs are to be delivered as separate projects, these should be removed from the program.

The Authority accepts SKM's findings with regards to this program. The effect for 2010/11 is that some minor works to enhance water mains are no longer needed and are therefore removed from the commissioned capital expenditure for 2010/11 ($0.04 million). The Authority notes that this finding is underpinned by QUU's ongoing review of its expenditure forecasts.

Further, in relation to the distinction between operating and capital expenditure, the Authority notes that it has previously defined capital expenditure as a non-current asset where the expenditure:

(a) relates to the purchase, development or construction of a new non-current asset; and/or

(b) will increase the capacity or functionality of non-current assets; and/or

(c) will significantly reduce the ongoing maintenance of non-current assets; and/or

(d) will extend the service life of non-current assets beyond that expected when they were originally installed.

This definition established the criteria for capital expenditure and should be adopted by QUU in the future.

(viii) Ipswich Sewage Rising Mains Renewal Program Project (Rolling Program)

Ipswich sewerage network is currently serviced by 62 sewage pump stations. A preliminary investigation of 56 rising mains undertaken during 2006 identified 14 high-risk pipelines requiring detailed assessment. An investigation was undertaken to determine the extent of corrosion in these 14 pipelines. The investigation has identified four rising mains requiring rehabilitation.

A detailed condition survey of all rising main air release valves has commenced in order to identify air valves requiring rehabilitation.

Projects identified under this program for inclusion mainly in the 2010/11 financial year include: replacing rising main air valves; Lamont St rising main rehabilitation; and, Enterprise St Wulkuraka rising main replacement.

The capital expenditure proposed is $0.9 million over the 2010/11 – 2012/13 financial years (see Table 28).

**Table 28: Ipswich Sewerage Rising Mains Renewal Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Ipswich Rising Mains | 0.6 | 0.2 | 0.1 | 0.9 |

*Source SKM (2010)*

SKM considered that this project is prudent as sufficient information has been provided to support the case for addressing renewal based on compliance with safety, operational and environmental standards. However, SKM noted that there appeared to be minimal financial analysis during the project justification stage. SKM suggested that future project justifications should contain some basic financial analysis/comparison and an Asset Management check where whole of life considerations can be taken into account.

With regards to efficiency, SKM considered that the costs associated with this project are efficient. However, SKM noted that given the nature of this program, that is, typically small renewal works, some discussion should be included justifying why the works should be capitalised. SKM stated that some projects could be determined as a mix of capital expenditure and operational expenditure given their nature.

Based on the information provided, SKM concluded that the capital expenditure for this program of works for the three years commencing 2010/11 appears to be prudent and efficient.

The Authority accepts SKM findings that this project is prudent and efficient.

(ix) Lockyer Valley Water Reticulation Mains Improvement Program (Rolling Program)

This project comprises of upgrade to the water mains in William St and a link main in Spencer/Crescent Street in Gatton.

The capital expenditure proposed is $2 million over 2010/11 – 2012/13 (see Table 29).

**Table 29: Lockyer Valley Water Reticulation Mains Improvement Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Water Mains Improvement | 0.1 | 0.1 | 1.8 | 1.9 |

*Source SKM (2010)*

SKM considered that this project is prudent as the upgrade of the water main in William St is required to meet fire-flow requirements. The new link main in Spencer/Crescent streets will benefit the area through improved flows, reliability and decreased risk of dirty water complaints that are usually associated with dead-end-mains. The program provides enhanced services to customers in order to achieve standards of service, minimise complaints, and services to new developments.

With regards to efficiency, SKM notes that the project costs appear to be reasonable. The unit rates provided are within 30% of the benchmarks identified by SKM.

Based on the information provided, SKM recommended that for 2010/11 the project is prudent and efficient. However, SKM notes that due to insufficient information provided for future years (although this is consistent with the stage of development), it is not possible to comment on the efficiency of costs in 2011/2012 and 2012/13.

The Authority accepts SKM's recommendation that the project is prudent and efficient in 2010/11. The Authority also accepts SKM's recommendation that while the costs of future years should be further reviewed, the capital expenditure profile not be adjusted at this stage.

(x) Lockyer Valley Water Reticulation Mains Renewal Program

The program includes the replacement of five water mains in the townships of Gatton and Laidley.

The capital expenditure proposed is $1.1 million over 2010/11 – 2012/13 (see Table 30).

**Table 30: Lockyer Valley Water Reticulation Mains Renewal Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Water Mains Renewal | 0.16 | 0.16 | 0.80 | 1.12 |

*Source SKM (2010)*

SKM considers that the program is prudent as the replacement of the five existing watermains ensures that the existing standards of service are met. Mains identified as being older than 60 years were selected for replacement using historical construction records, a method SKM considers to be appropriate.

With regards to efficiency, SKM concluded that the costs associated with this project appear to be reasonable, as unit rates provided are within a reasonable range of the SKM benchmarks.

Based on the information provided, SKM recommended that for 2010/11 the project is prudent and efficient. However, SKM notes that due to insufficient information provided for future years (although this is consistent with the stage of development), it is not possible to comment on the efficiency of costs in 2011/2012 and 2012/13.

The Authority accepts SKM's findings that the capital expenditure for 2010/11 is prudent and efficient and that the capital expenditure for future years should be further reviewed. It is not proposed to remove the 2011/12 and 2012/13 expenditure from the RAB at this stage.

(xi) Scenic Rim Brookes Drive Reservoir (Kooralbyn) Implementation

This project will construct a new 250kL reservoir at Brookes Drive, Kooralbyn to replace the existing 20kL reservoir. The project also includes construction of new inlet and outlet pipework and relocation of the existing telemetry equipment and water booster.

The capital expenditure is proposed to be $0.2 million in 2010/11 (see Table 31).

**Table 31: Scenic Rim Brookes Drive Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Brookes Drive | 0.2 | - | - | 0.2 |

*Source SKM (2010)*

SKM considers the project to be prudent as replacing the existing reservoir improves fire flow protection, ensures the ability to meet peak demands through increased storage, improves the reliability of supply during power outages to properties supplied under gravity from the reservoir and reduces the number of instances where the water pressure falls below standards of service levels.

Based on the information provided, SKM considers the project to be efficient based on SKM quotes from suppliers.

The Authority accepts SKM's finding that the project is prudent and efficient.

(xii) Somerset Water and Wastewater Reticulation Mains Renewal Programs

Two Somerset renewals projects were reviewed by SKM – relating to water reticulation mains and wastewater reticulation mains.

The Somerset water program involves the replacement of assets that are in poor condition and/or are under performing. These are assets approaching the end of their lives, but also include assets that show sign of early failure. Capital expenditure of $1.3 million over 2010/11 - 2012/13 is proposed (see Table 32).

**Table 32: Somerset Water Reticulation Mains Renewal Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Water Reticulation | 0.3 | 0.5 | 0.5 | 1.3 |

*Source SKM (2010)*

The Somerset wastewater program involves the management of assets that are in poor condition and/or are under performing. These are assets approaching the end of their lives, but also

include assets that show sign of early failure, such as through excessive tree root intrusion. Capital expenditure of $0.8 million over 2010/11 - 2012/13 is proposed.

**Table 33: Somerset Wastewater Reticulation Mains Renewal Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Wastewater Reticulation | 0.3 | 0.1 | 0.4 | 0.8 |

*Source SKM (2010)*

SKM considered both programs to be prudent as existing infrastructure is replaced to ensure desired standards of service are achieved.

However, SKM notes that there is an opportunity for improvement in processes based on the information provided. For both programs QUU does not have a written policy and procedure for target levels of service, prioritisation of investigations, compilation of relevant information on the mains, consideration of the NPV of replacement against ongoing repair and compilation and approval of the submission.

Further, SKM notes that no previous reports and studies, for example, NPV analysis, planning reports, feasibility studies, concept reports and detailed design reports including any costs associated with proposed works were provided.

SKM therefore recommends that QUU apply a more rigorous assessment and documentation process for both the water and wastewater main renewal program.

Based on the information provided, SKM recommends that for 2010/11 the programs are prudent and efficient. However, SKM notes that due to insufficient information provided for future years (which SKM considers is consistent with the stage of development), it is not possible to comment on the efficiency of costs in 2011/2012 and 2012/13.

The Authority accepts SKM's recommendation that the programs are prudent and efficient for 2010/11. The Authority also accepts SKM's finding that QUU should develop a more rigorous assessment for these programs before the costs of future works can be assessed and pending this assessment the expenditure for 2011/12 and 2012/13 should not be removed from the capital expenditure forecasts at this stage.

(xiii) Lang Parade Wet Weather Pump Station

The capacity upgrade of Lang Parade Wet Weather Pump Station (LPWWPS) is proposed to address the surcharging issue (overflow), located between Lang Parade and the intersection with the Hocking St siphon. This option involves the construction of a new wet weather pumping station, a rising main and a high level gravity sewer.

The capital expenditure is proposed to be $2.1 million in 2012/13 (see Table 34).

**Table 34: Lang Parade Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Lang Pde | - | - | 2.1 | 2.1 |

*Source SKM (2010)*

In response to a Request for Information from SKM, QUU revised its cost for this project up to $4.38 million.

LPWPS was identified as being required in the 2002 Northern Sewerage Catchment Master Plan. The 2006 Master Plan did not identify LPWWPS as being required as other options were being canvassed at the time. The sewerage scheme is currently being reviewed as part of the 2010 Master Plan and the Master Plan is expected to be completed in 2010.

Given this, SKM noted that there was a lack of information to justify the decision to go-ahead with this project, no business case was provided, no detailed design of the project was provided, there was a lack of accompanying documents that reflected integration with risk and asset management planning and corporate directives and a lack of details with regards to the procurement policy.

With regards to the scope of the works, SKM noted that it is unclear from the feasibility report, master plan (2002) and master plan review (2006) on how the conclusion to implement this project was reached. Further, SKM commented that it is difficult to confirm whether the project is of the right order of magnitude given the limited data available, and the fact the need for the project will not be confirmed until the completion of the 2010 master plan.

SKM recommended that this project should be reviewed again for its prudency and efficiency when more detailed information is available (particularly on the market conditions, and deliverability and timing).

The Authority accepts SKM's finding that this project be removed from the forecast capital works for QUU until additional information is available to assess its prudency and efficiency. This adjustment does not affect the commissioned expenditure relevant to the RAB in 2010/11.

(xiv) Scenic Rim Upgrade Walker Drive Reservoir Kooralbyn

The Scenic Rim Upgrade Walker Drive Reservoir Kooralbyn project comprises the augmentation of a new 8ML reservoir at Walker Drive, Kooralbyn. The capital expenditure is proposed to be $2.6 million in 2011/12 (see Table 35).

**Table 35: Scenic Rim Walker Drive Upgrade Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Walker Drive | - | 2.6 | - | 2.6 |

*Source SKM (2010)*

SKM noted that supporting information stated that the infrastructure is not required during the interim regulatory period and that the project should be removed from the 2011/12 budget and reviewed again for inclusion into future budgets once more information is available.

The Authority accepts SKM's findings that this project be removed from QUU's proposed capital works for 2011/12. This adjustment does not affect the commissioned expenditure relevant to the RAB in 2010/11.

Summary

The Authority notes that QUU's submission to the Authority already incorporates reductions of around $185.1 million in the capital expenditure program initially proposed by councils for 2010/11.

Based on the analysis outlined earlier, the Authority notes that of the 15 projects reviewed for QUU, the majority were found to be prudent and efficient for 2010/11. For 2010/11, the only adjustments relates to some minor works to enhance water mains which were not needed ($0.04 million), and this finding arose from recent information provided by QUU.

For much of the expenditure in 2011/12 and 2012/13, insufficient data (and the early stage of planning) meant that the consultants were unable to come to a conclusion on prudency or efficiency. Other projects were found to require some adjustment. However, these were not due to be commissioned in 2010/11. These included Ipswich Goodna STP Upgrade, Brisbane Burst Mains Renewal Program, Lockyer Valley East Sewerage Scheme, Bromelton (Scenic Rim) Regional Sewage Treatment Plant, Lang Parade Wet Weather Pump Station, Scenic Rim Walker Drive Upgrade. Again, some of these adjustments arose from more recent information provided by QUU in response to the Authority's investigation and review.

The Authority proposes to subject these projects and programs to ongoing review as part of its 2011/12 Price Monitoring review. If as part of future reviews, the information to justify the projects is not available (despite the stage of planning), the Authority will remove these costs from the capital expenditure forecasts. On the other hand, if projects can be demonstrated to be prudent and efficient, they would be included.

The Authority expects that entities would be developing their process and systems to ensure that the prudency and efficiency of all projects can be optimally demonstrated over time. The Authority's 2011/12 price monitoring review will involve a review of actual capital expenditure in 2010/11, and the reasons for variations with original forecasts will be explored.

Based on SKM's findings, the Authority considers that the level of information provided for this review is broadly in line with the context of the newly formed entity, whereby QUU is undertaking a process of aligning the policies and procedures across all the five geographic areas.

The Authority supports the findings of the internal review initiated by QUU which recommended that:

(a) 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;

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

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

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

In addition, the Authority considers that QUU should continue to develop processes for considering prudency and efficiency from a regional perspective. The Authority would expect further efficiencies in capital expenditure to be found by QUU over the interim period.

**Table 36: Comparison between QUU and Authority's capital expenditure ($m)**

| | *2010/2011* | *2011/2012* | *2012/13* | *Total* |
|---|---|---|---|---|
| Capex (QUU) | 114.9 | 342.0 | 426.1 | 883.0 |
| + Contributed assets | 54.5 | 90.5 | 98.3 | 243.3 |
| - Further QCA adjustments | -0.04 | -137.0 | 117.3 | -20.0 |
| Total adjustments | 54.5 | -46.7 | 215.5 | 223.3 |

*Source QUU (2010) and QCA calculations. Note The Authority's adjustments for 2011/12 onwards are based on its revised estimates including the Authority's revised WACC, see Appendix B. The revised WACC does not affect QUU's expenditure estimates in 2010/11, as the WACC is only applied to expenditure in 2010/11 that is due to be commissioned in later years.*

**In respect of data adequacy, the Authority notes that QUU provided capital expenditure as commissioned, as requested by the Authority. However, QUU only provided disaggregated costs for two of the seven service categories as such it is not possible to develop a MAR at a more disaggregated service level than water and wastewater.**

**The Authority notes that currently QUU has a number of varying standards of service for customers and asset design as is expected of a newly formed entity. Work should be progressed to consolidate standards across the region.**

**The Authority supports the findings of an internal QUU review into cost estimation and further considers that QUU should continue to develop processes which take into account a regional perspective when developing its future capital works program.**

**The Authority notes that of the proposed $883 million capital expenditure to be commissioned over the interim period, the majority of sampled projects for 2010/11 were found to be prudent and efficient, except for some minor works to enhance water mains which were not needed ($0.04 million). For 2011/12 onwards, a number of projects were found to require adjustment or further information is required to demonstrate prudency and efficiency and these will be subject to ongoing review by the Authority.**

*Contributed, Donated and Gifted Assets*

As noted above, the 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.

Under the price monitoring framework accepted by the Government, the Authority recommended that the Government align the review processes for infrastructure charges and ongoing prices, and that the entities be made responsible for infrastructure charges. The Authority noted that, if this was not possible, the Authority would assess whether the method adopted by the entities to forecast contributed assets and capital contributions was reasonable in the circumstances.

Submissions

In its submission, the Department of Infrastructure and Planning questioned the benefits of permitting an entity to earn a return on contributed assets.

QUU indicated in its submission that it expected to receive $243 million in contributed, donated and gifted assets over the interim period and $308 million in capital (cash) contributions (Table 37). The vast majority of cash contributions arise from Planning Scheme Policies (PSP).

**Table 37: QUU - Contributed, Donated and Gifted Assets & Capital Contributions ($m)**

| | *2008/09* | *2009/10* | *2010/11* | *2011/12* | *2012/13* | *Total 2011-13* |
|---|---|---|---|---|---|---|
| Contributed Assets | 64.72 | 57.24 | 54.54 | 90.51 | 98.26 | 243.31 |
| Capital Contributions[a] | 80.55 | 88.81 | 92.63 | 101.21 | 114.15 | 307.98 |
| **Total** | **145.27** | **146.05** | **147.17** | **191.72** | **212.41** | **551.30** |

[a] *includes grants and subsidies*
*Source QUU (2010)*

In allocating capital contributions, QUU has assigned contributions to the relevant asset classes by using the asset classes' proportion of total new capital expenditure going forward.

QUU submitted that, while its forecast revenues have been estimated under a revenue offset approach, it has not formed a view on the method that will be used in 2011/12 and 2012/13.

QUU indicated that the primary drivers of the growth in contributed assets and capital contributions are population growth and future development demand.

QUU noted that the 2010/11 budget and forward forecasts for contributed assets and capital contributions are as provided by the shareholding councils.

Brisbane capital contributions for 2010/11 were forecast using the forecasts contained in its current planning scheme and with a phased in transition to a proposed ICS by 2015/16. Ipswich used the preceding year's growth in lots multiplied by the previous year's average contribution per lot indexed by the rate outlined in the Ipswich PSPs. QUU noted that it made adjustments to these forecasts to exclude the bulk water components of these charges.

Lockyer Valley and Scenic Rim submitted forecasts of capital contributions developed and provided to Council of Mayors South East Queensland as part of water reform due diligence. Somerset has not forecast any contributed assets or capital contributions over the interim period.

QUU noted that it intends to investigate an appropriate method of forecasting contributed assets and capital contributions across all districts.

In its submission, QUU also noted that, in 2008/09, the Somerset Regional Council received an extraordinary donation of water assets from the Queensland Government valued at $11 million. QUU noted that the relative size of this donation compared to Somerset's annual utility revenue did not allow for a compensating offset against the maximum allowable revenues and therefore charges. Rather than applying its standard revenue offset approach for this asset, it has excluded the asset from the RAB. QUU noted that this was done to avoid charging customers

for assets that Somerset did not pay for and QUU did not have the ability to reduce utility charges to the extent required.

Authority Analysis

As noted above, the Authority is to accept as prudent and efficient and include in the RAB via capital expenditure all contributed assets and capital contributions received between 1 July 2008 and 30 June 2010.

Under the approved price monitoring framework, the entities should not earn a return on, or of, contributed assets and capital contributions. This is in accordance with the principle six of the National Water Initiative Pricing Principles for the recovery of capital expenditure (Natural Resource Management Ministerial Council, 2010). The Ministerial Direction allows the entities to choose an asset or revenue offset approach to the treatment of these assets from 1 July 2010. Both approaches can be such as to ensure that a return on, and of, these assets cannot be charged to users.

The Authority notes the value of QUU's contributed assets for 2008/09 and 2009/10 can be traced to supporting QUU documents based on council's financial records. Capital contributions for 2008/9 and 2009/10 cannot yet be verified as supporting information based on council records has not been provided. Further, the Authority notes that 2009/10 data are not yet able to be verified, as audited records are not yet available.

From 1 July 2010, the water and wastewater components of the infrastructure charging regimes of QUU's five council areas (council PSPs) transitioned to become QUU's SEQ Infrastructure Charges Schedule (ICS). In essence, QUU has inherited these upfront charges from councils. Under relevant legislation, QUU cannot significantly alter these charges unless they are approved by the Minister for Infrastructure and Planning.

The Authority also notes that the Government has convened an infrastructure charges taskforce to investigate the current infrastructure charging regime and opportunities to simplify charges and provide greater certainty. The taskforce has recently released for comment an interim consultation report which includes maximum standard infrastructure charges. Should these maximum charges be adopted by Government, and apply to QUU, they are likely to affect forecasts of contributed assets and cash contributions.

Given the above, the Authority considers it to be reasonable for QUU's forecasts of contributed donated and gifted assets and cash contributions from 1 July 2010 to be based on available council forecasts. For QUU, these forecasts are generally based on the PSPs that have now become QUU's SEQ Infrastructure Charges Schedule (ICS). The Authority supports QUU's proposal to further investigate an appropriate method of forecasting contributed assets and capital contributions across all districts.

The Authority notes that QUU has applied the revenue offset approach to the treatment of contributed assets and capital contributions for 2010/11 (while reserving its decision on this for years beyond 2010/11). In line with this decision, the Authority has reduced its estimate of QUU 2010/11 costs for water by $61.4 million and by $85.7 million for wastewater. This ensures customers are not paying twice for relevant assets.

The Authority considers that the treatment of the extraordinary donation to Somerset regional council is appropriate. The Authority notes that, if QUU was to apply its standard revenue offset approach, it would have required a reduction in water charges for Somerset residents to zero for a period of more than two years. The possibility for zero or negative prices has previously been identified by the Authority as a key risk in the adoption of the revenue offset approach.

**The Authority considers that the QUU's reliance on councils' forecasts of contributed assets and capital contributions is reasonable. The Authority supports QUU's proposal to further investigate an appropriate method of forecasting contributed assets and capital contributions across all districts.**

## 1.7 Rolling Forward the RAB

In accordance with the Ministerial Direction and normal regulatory practice, the initial regulatory asset base 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 take into account the latest available ABS CPI (all groups, Brisbane) - however for 2009/10, the Queensland State Budget inflation forecast may be used.

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 Submission

QUU adopted a straight line approach to depreciation based on existing asset lives. In relation to indexation, 2008/09 was based on ABS CPI (all groups, Brisbane) of 2.0% and, for 2009/10 onwards, an inflation forecast of 2.5% was used. Disposals for 2008/09 and 2009/10 were based on council's written down asset values, adjusted to reflect their RAB value. QUU has not forecast disposals from 1 July 2010.

### Authority Analysis

The initial RAB as at 1 July 2008 for QUU is $1.60 billion for water and $2.33 billion for wastewater. To this has been added actual capital expenditure to 30 June 2010 and the Authority's view of prudent and efficient capital expenditure in 2010/11.

The Authority engaged SKM to review the asset lives provided by QUU against those in their fixed asset registers. SKM found that the asset lives for existing assets provided in the templates align with those in council financial records.

For new assets, SKM noted that QUU's asset lives are based on Brisbane averages, which SKM considered to be reasonable. SKM noted that QUU is revising asset lives and recommended that this revision take into account data for all geographic areas. SKM compared some specific QUU asset lives to benchmarks sourced from water industry codes of practice and found them to be reasonable.

As a result, for price monitoring purposes in 2010/11, the Authority has accepted the asset lives provided by QUU and supports QUU's decision to review them. It would be expected that a

comprehensive review of individual asset lives would form part of any deterministic regulatory regime.

Under the approved framework, the Authority recommended that forecast inflation be estimated using forecasts of CPI as determined by the difference between the RBA return on the market rate for five year bonds and five year capital indexed bonds.

The Authority has adopted the ABS CPI for Brisbane for use in indexing the asset values in the RAB. For 2008/09, this was 2.02%. For 2009/10, the Authority has accepted QUU's 2.5% estimate as this is the Queensland State Budget inflation forecast for 2009/10. In relation to forecast CPI from 1 July 2010, the Authority has adopted an estimate of 2.48% which is the difference between the RBA return on the market rate for five year bonds and five year capital indexed bonds, as proposed in the Authority's framework report.

The Authority has accepted QUU's approach to estimating disposals in 2008/09 and 2009/10 as this is consistent with council's financial records and their RAB values. The Authority notes that QUU has not forecast disposals from 1 July 2010. The Authority notes this is unlikely to be a material issue given the extent of disposals in 2007/08 and 2008/09 (0.7% and 0.2% respectively, for water).

The Authority has rolled forward the initial RAB for capital expenditure, indexation and disposals (see Tables 38 and 39).

**Table 38: Asset Base Roll Forward – Water ($m)**

| | ***2008/09*** | ***2009/10*** | ***2010/11*** |
|---|---|---|---|
| Opening RAB | 1,606.04 | 1,681.94 | 1,778.06 |
| + Capital expenditure | 92.84 | 98.97 | 72.18 |
| + Indexation | 33.32 | 44.32 | 46.05 |
| - Depreciation | 38.95 | 43.56 | 48.35 |
| - Disposals | 11.31 | 3.61 | - |
| - Capital contributions[1] | - | - | - |
| Closing RAB (QCA) | 1,681.94 | 1,778.06 | 1,847.93 |

[1] *Only relevant for asset base offset approach to the treatment of capital contributions. QUU has adopted a revenue offset approach.*
*Source QUU (2010), SKM (2010), QCA*

**Table 39: Asset Base Roll Forward – Wastewater ($m)**

| | *2008/09* | *2009/10* | *2010/11* |
|---|---|---|---|
| Opening RAB | 2,339.01 | 2,376.79 | 2,501.40 |
| + Capital expenditure | 89.60 | 169.29 | 97.25 |
| + Indexation | 48.09 | 62.45 | 64.25 |
| - Depreciation | 90.72 | 97.59 | 104.45 |
| - Disposals | 9.19 | 9.54 | - |
| - Capital Contributions[1] | - | - | - |
| Closing RAB | 2,376.79 | 2,501.40 | 2,558.45 |

*[1] Only relevant for asset base offset approach to the treatment of capital contributions. QUU has adopted a revenue offset approach.*
*Source QUU (2010), SKM (2010), QCA*

The Authority's estimate of the regulatory opening asset base for price monitoring purposes in 2010/11 does not differ materially from that of QUU ($1,778.06 million for water compared with QUU's $1,775.64 million and $2,501.40 million for wastewater compared with QUU's $2,496.78 million).[9]

The Authority's estimate of the closing asset value as at 30 June 2011 is $1,847.93 million for water and $2,558.45 million for wastewater. QUU's estimate for water was $1,844.20 million and $2,551.47 million for wastewater.

**The Authority's estimate of the regulatory opening asset base for price monitoring purposes in 2010/11 does not differ materially from that of QUU ($1,778.06 million for water compared with QUU's $1,775.64 million, and $2,501.40 million for wastewater compared with QUU's $2,496.78 million).**

**The Authority's estimate of the closing asset value as at 30 June 2011 is $1,847.93 million for water and $2,558.45 million for wastewater.**

## 1.8 Return on Capital

The return on capital compensates investors for the opportunity cost of their investment. The Authority uses a nominal post-tax weighted average cost of capital (WACC) to determine the appropriate return on capital on the regulatory asset base, specifically Officer's 'vanilla' WACC3.

For this price monitoring review, the Authority has adopted its standard approach to estimate the WACC. To this end, the Authority engaged Dr Martin Lally to provide specialist advice in relation to appropriate WACC parameter values.

Whether the current approach should be applied to SEQ water in future is an issue to be explored over the interim period along with the form of regulation to be applied.

[9] At the time of price setting, QUU estimated a $4,297.56 million opening RAB, with indexation in 2010/11 of $111.76 million and depreciation of $150.77 million. The costs submitted to the Authority reflect more recent available to QUU at the time of making its submission and capital expenditure for 2010/11 as commissioned as required by the Authority.

*QUU submission*

In its submission, QUU proposed a WACC of 10.25% for price monitoring. QUU noted it adopted a WACC of 9.2% in setting prices for 2010/11 and reflected this in their information return for 2010/11. QUU also made a detailed submission on relevant WACC parameters.

QUU, in conjunction with Allconnex Water and Unitywater, engaged Competition Economists Group (CEG) to provide advice on WACC parameters. QUU adopted many of CEG's recommended parameter values in its submission but adjusted others to reflect the Authority's most recent approach. QUU's and CEG's reasoning is outlined in Appendix B.

The other two entities proposed a WACC of 9.88%, on the basis of CEG advice.

*Authority Analysis*

As noted above, many of the WACC parameters in the QUU submission are identical to those of the other entities.

Therefore, for clarity and to avoid repetition, the Authority has set out its detailed assessment of QUU's (and the other entities') WACC parameter values as per its standard approach in Appendix B. The analysis in this appendix is relevant to all entities.

As noted there, the main difference between QUU's and the Authority's WACCs is that, under the Authority's current approach, it matches the term of the risk-free rate and debt margin to the term of the regulatory period. The Authority's current approach has been explained in detail and applied by the Authority in its June 2010 Draft Decision on QR Network's 2010 DAU - Tariffs and Schedule F (which forms part of the undertaking approved in October 2010) and in its June 2010 Final Report on the Gladstone Area Water Board.

The Authority's estimated WACC of 9.35% (Appendix B) is lower than QUU's proposed 10.25% for price monitoring but higher than the 9.2% WACC QUU actually used in setting prices.

To calculate the return on capital, the Authority has applied the WACC to the entity's opening regulatory asset base and half the capital expenditure during the relevant year.

While the Authority has undertaken a comparison of the Authority's proposed return on capital for 2010/11 against that claimed by QUU, the Authority also sought to compare the QUU and Authority estimates for 2010/11 with those of councils for 2009/10.

It should be noted that such estimates of council's 2009/10 return on capital are based upon available records of dividends, actual cost of debt, retained earnings and capital gain (see Table 40). These do not necessarily reflect the cash benefit to councils over the costs of providing services as they do not necessarily reflect other benefits accruing to councils such as franchise fees. Further, capital gain is based on the Ministers advised RAB.

Any such comparison should therefore be treated with caution. A review of past arrangements is not considered to be consistent with the terms of reference of this review which relates to QUU's forecasts of revenues and costs for 2010/11.

**Table 40: Return on Capital ($m)**

| | *Costs 2009/10* | *Costs 2010/11* | *Water Costs 2010/11* | *Wastewater Costs 2010/11* |
|---|---|---|---|---|
| Return on Capital (QUU)[10] | 369.25 | 400.86 | 166.68 | 234.18 |
| Return on Capital (QCA) | - | 408.16 | 169.67 | 238.49 |
| **Difference** | **-** | **7.30** | **2.99** | **4.31** |

*Source QUU data template and subsequent information – return on and of capital for 2009/10 reflect financial data provided by council. Return on capital in 2009/10 is the sum of interest, dividends, retained earnings and capital gain. Return on capital for 2010/11 onwards is based on economic regulatory approaches.*

**The Authority proposes to use a WACC of 9.35% for interim price monitoring.**

## 1.9 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 Direction requires the Authority 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. The Ministerial Direction also requires the Authority to accept the operational constraints imposed by the SEQ Urban Water Arrangements Reform Workforce Framework 2010. These constraints include that there are to be no forced redundancies during the interim period.

The Authority notes that these constraints do not apply to new employees engaged temporarily to perform work on the establishment of the entities or independent contractors or employees engaged by labour hire companies that provide services to either the entity or participant council.

The Authority engaged SKM to review the reasonableness of QUU's forecasts of operational expenditure for its water and wastewater activities from 1 July 2010.

*QUU's submission*

QUU has proposed a total of $1.37 billion of operational expenditure over the interim period, comprised of $932 million of expenditure for water and $439 million for wastewater.

QUU allocated these operational expenditures to just four cost categories, bulk water costs, employee costs, contractor costs and materials and services. QUU allocated its operational costs only to drinking water and wastewater via sewer services. Bulk water costs account for more than half of QUUs total operating costs over the interim period while materials and services account for a further 40% of total operating costs.

[10] At the time of price setting, QUU estimated a $410.03 million required return on capital for 2010/11, applying a 9.2% WACC to a higher asset base due to higher estimates of capital expenditure for 2010/11 at that time. The costs submitted to the Authority reflect more recent information available to QUU at the time of making its submission and the use of commissioned capital expenditure as required by the Authority.

Operational Budget Development

QUU adopted a structured approach to the development of its operational expenditure budget for 2010/11. The budget was developed in two stages. Firstly, the five former council water businesses prepared a budget for 2010/11 as if they were to continue without any institutional reform ('as is' budget). QUU developed a series of budget guidelines and required each council to confirm that their 'as is' budgets were developed in accordance with the guidelines.

The second stage of the budgetary process involved the determination of changes needed for the merger of the five business and the formation of QUU ('to be' budget). This was conducted by line managers within QUU. These budgets are underpinned by zero base models for asset maintenance, planned schedule maintenance, corrective maintenance, responsive maintenance, electricity, chemicals and sludge handling.

The final QUU operational budget for 2010/11 is a combination of the 'as is' budgets developed by the councils and the 'to be' budget developed by QUU. The final budget is maintained within the QUU financial model with the relevant assumptions and reasoning documented. The use of the 'as is' budgets allows for the majority of costs to be directly attributable to geographic areas and services. The final budget for 2010/11 was approved by the QUU Board.

In subsequent information provided to the Authority, QUU identified that the adoption of these processes in 2010/11 led to the reduction of operating costs of $43 million, and these savings are already incorporated in the costs submitted to the Authority.

In forecasting operating cost beyond 2010/11, QUU has applied both generic cost indices and geographic specific growth factors to the 2010/11 budget. The high level indices and growth factors used by QUU to develop the 2011/12 and 2012/13 budgets are detailed in Table 41.

**Table 41: Operating Cost Indexes and Growth Factors**

| *Cost Group* | *Cost Index* | | *Annual Growth Factors* | | | | |
|---|---|---|---|---|---|---|---|
| | *2011/12* | *2012/13* | *Brisbane* | *Ipswich* | *Lockyer Valley* | *Scenic Rim* | *Somerset* |
| Population growth | | | 1.33% | 5.44% | 2.83% | 3.3% | 2.57% |
| Direct Labour | 4.30% | 4.25% | 1.00% | 1.50% | 1.50% | 1.50% | 1.50% |
| Bulk Water | Estimate bulk volumes at Water Grid Manager forecast prices indexed at 2.5% pa | | | | | | |
| Electricity | 2.50% | 2.50% | Aligned to percentage change in bulk water volume | | | | |
| Chemicals | 2.50% | 2.50% | Aligned to percentage change in bulk water volume | | | | |
| Sludge Handing | 2.50% | 2.50% | _ | _ | _ | _ | _ |
| Other Costs | 2.50% | 2.50% | 0.25% | 0.40% | 0.40% | 0.40% | 0.40% |

*Source QUU (2010)*

Operational Expenditure forecasts

QUU's forecast total operational expenditure over the period 2010/11 to 2012/13 is set out in Tables 42 and 43 respectively.

**Table 42: QUU's Forecast Operating Costs Water 2010-2013 ($m)**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Bulk Water Costs | 188.73 | 230.85 | 276.48 |
| Retail Operating Costs | | | |
| Customer service and billing | na | na | na |
| Regulated demand management costs | na | na | na |
| Community service obligation costs | na | na | na |
| Distribution Operating Costs | | | |
| Employee expenses | 12.92 | 13.65 | 14.39 |
| Contractor expenses | 0.13 | 0.13 | 0.14 |
| GSL payments | na | na | na |
| Materials and services (including electricity and chemicals) | 61.91 | 65.09 | 68.12 |
| Licence or regulatory fees | na | na | na |
| Natural resources management costs | na | na | na |
| Corporate costs | na | na | na |
| **Total Operating Costs** | **263.69** | **309.72** | **359.13** |

*Note na indicates that costs were not disaggregated to these categories in a manner consistent with the Authority's data template.*
*Source QUU (2010), SKM (2010), QCA*

**Table 43: QUU's Forecast Operating Costs Wastewater 2010-2013 ($m)**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Bulk Water Costs | 0.94[a] | 1.13 | 1.31 |
| Retail Operating Costs | | | |
| Customer service and billing | na | na | na |
| Regulated demand management costs | na | na | na |
| Community service obligation costs | na | na | na |
| Distribution Operating Costs | | | |
| Employee expenses | 23.81 | 25.16 | 26.52 |
| Contractor expenses | 0.13 | 0.13 | 0.14 |
| GSL payments | na | na | na |
| Materials and services (including electricity and chemicals) | 114.95 | 120.02 | 124.96 |
| Licence or regulatory fees | na | na | na |
| Natural resources management costs | na | na | na |
| Corporate costs | na | na | na |
| **Total Operating Costs** | **139.83** | **146.44** | **152.93** |

[a] *QUU has included costs related to the purchase of purified recycled water from the SEQ Bulk Water Grid Manager in the bulk water costs for wastewater. na indicates that costs were not disaggregated to these categories in a manner consistent with the Authority's data template.*
*Source QUU (2010), SKM (2010), QCA*

QUU has forecast that its total operational expenditure will increase from $269.5 million in 2008/9 to $403.52 million in 2010/11 and then to $512.1 million in 2012/13; an average annual increase of 17.14%.[11]

QUU operating costs for water and wastewater are forecast to increase over the interim period by 36% and 9% respectively. QUU stated in its submission that the primary drivers for increases in operating costs are increased bulk water costs, population growth and compliance with environmental standards.

In subsequent information provided to the Authority in late 2010, QUU identified further internal operating efficiency targets of $5 million in both 2011/12 and 2012/13. These targets are not included in their submission to the Authority.

*Authority's Analysis*

The Authority engaged SKM to review the reasonableness of QUU's operational expenditure. The assessment of the reasonableness of operational expenditure was intended to take into account the relevant service standards, Frontier's revised demand forecasts, possible

[11] At the time of price setting, QUU estimated $400.51 million in operating expenditure for 2010/11. The costs submitted to the Authority reflect more recent information.

substitution between capital and operating expenditure and the potential for efficiency gains and economies of scale.

### Adequacy of Operational Expenditure Data Provision

Prior to assessing the reasonableness of proposed operational expenditure, SKM reviewed QUU's submission to ensure that QUU provided comprehensive and accurate information.

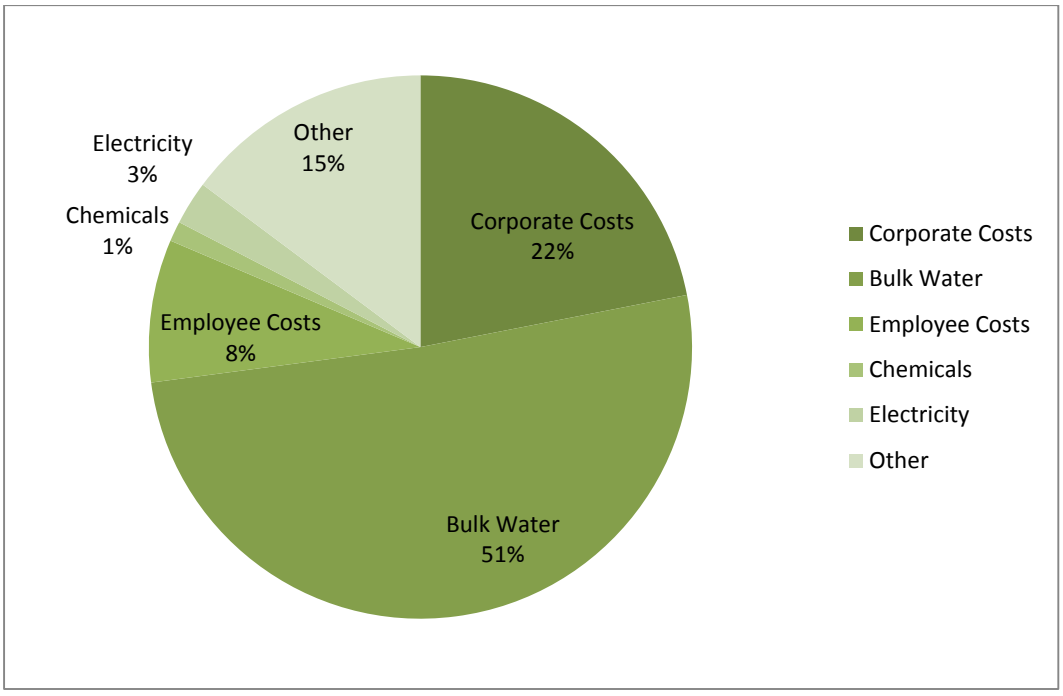
QUU's submission did not assign operating costs against all of the cost categories requested in the Authority's Information Requirements for 2010/11, with some cost categories aggregated into other categories.

SKM found that, in order to review the reasonableness of operational expenditure, data at a greater level of disaggregation was required. This was particularly true in the case of the materials and services category which comprised 40% of QUU's of total operational expenditure and includes all cost with the exception of employee costs and bulk water costs.

In response to a request for information from SKM, QUU provided operational expenditure on a more disaggregated basis which separately identified electricity and chemical costs (Chart 4).

SKM identified data in QUU's data template that referred to corporate (labour and material and services allocations) and other costs. SKM noted these did not align with the Authority's definitions in the information requirements.

**Chart 4: QUU's Operating Costs 2010-2013**




*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 SKM (2010)*

### Operational Budgeting

SKM reviewed the policies and procedures followed by QUU to ensure that they represented good industry practice. SKM reviewed the budget guidelines used in the preparation of the

2010/11 operational budget and found that the guidelines provided a comprehensive guide to a range of aspects associated with the budget development and approval process including:

(a) outline of the budget process;

(b) who has approved the process;

(c) responsibilities;

(d) budget approval and development;

(e) protocols for changes and inter-council communications;

(f) parameters to be applied (e.g. CPI);

(g) review and approval programme; and

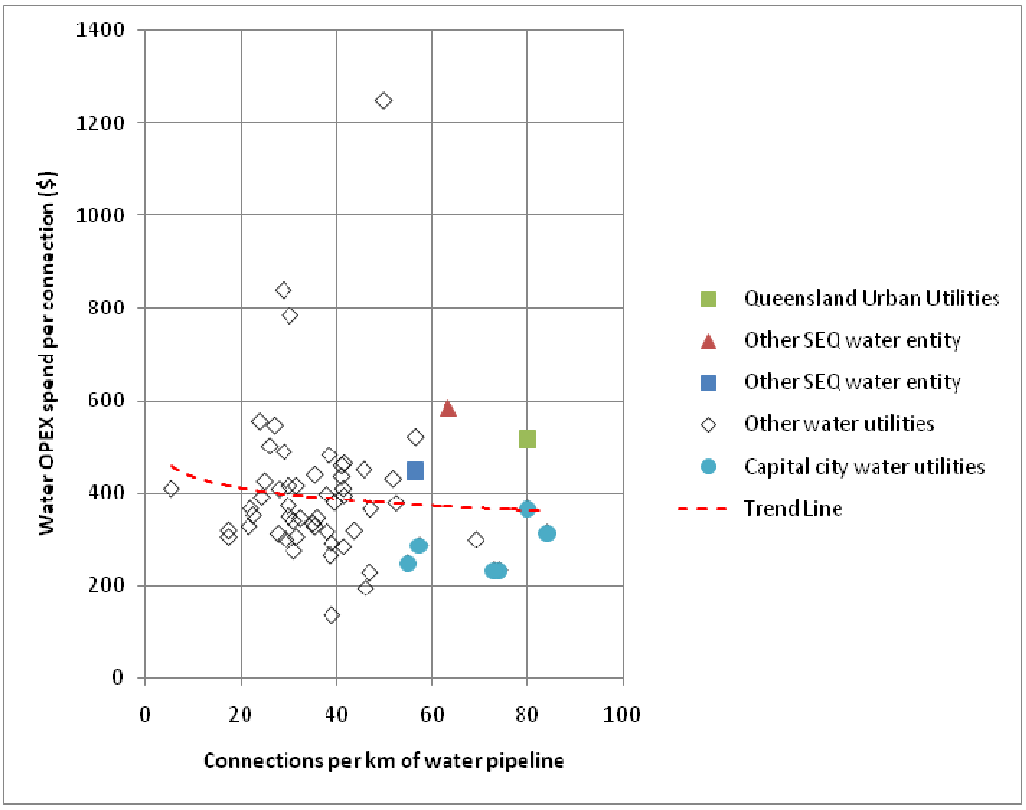
(h) schedules to be produced.

In regards to the budget process adopted by QUU, SKM found that the operational expenditure budget process represented good industry practice.

#### Reasonableness

SKM benchmarked QUU's 2010/11 aggregate operational expenditure for water and wastewater against a range of other Australian utilities using two key benchmarks. For water, QUU's relative performance was measured using both opex spend per connection and the number of connections per kilometre (Chart 5).

**Chart 5: Water Operational Expenditure**



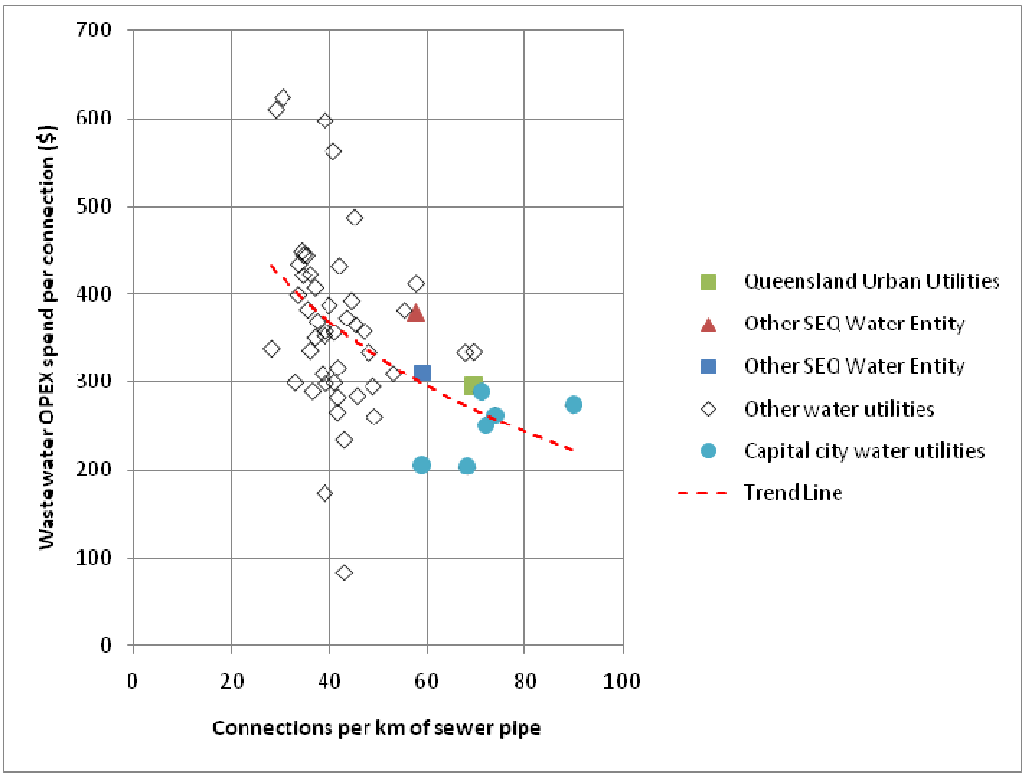

*Note Other utilities data derived from the 2008/09 NWC Performance Report with costs inflated by CPI to 2010/11*
*Source SKM (2010)*

SKM found that QUU operational expenditure for water in 2010/11 was generally higher than that of similar sized water utilities in other jurisdictions. SKM noted that this was due in part to higher SEQ bulk water costs. When bulk water costs are removed from this analysis, SKM found that, on a per connections basis QUU's operating expenditure for 2010/11 ($147/connection) is broadly consistent with some of its interstate peers (Sydney $139/connection and Melbourne $97-$168/connection).

The Authority notes that SKM's benchmarks for operating costs for other water utilities (barring those in SEQ) assume other entities' costs per connection have remained constant in real terms since 2008/09. There would therefore appear to be some further opportunity for efficiency gains to achieve best practice.

Using the same method for QUU's wastewater operational expenditure (Chart 6), SKM found that QUU's proposed 2010/11 wastewater operating expenditure is in line with that of other Australian water utilities.

**Chart 6: Wastewater Operational Expenditure**




*Note CPI has been applied to other utilities data to inflate the costs contained in the 2008/9 NWC Performance Report to 2010/11*
*Source SKM (2010)*

The Authority notes that this high-level analysis shows where QUU's operating costs for 2010/11 fall within a range of values bounded by other water utilities, and indicates the extent of operating efficiencies that could potentially be achieved.

The Authority notes that economic regulators in other jurisdictions have applied efficiency gains to water retail businesses' proposed operating expenditures of up to 3.5% (NWI Steering Group on Water Charges 2007).

The Authority has considered whether to apply operating efficiency targets upon QUU's non-bulk operating costs. However, the Authority notes that 2010/11 operating expenditure in QUU's submission already incorporates a 16.7% saving on non-bulk operating costs ($43 million on initial estimates of non-bulk operating costs).

The Authority has therefore not imposed further high level efficiency targets for 2010/11. Efficiency targets for 2011/12 and 2012/13 are discussed further below.

SKM then sought to review key components of QUU's submitted operating expenditure.

### Reasonableness of Sampled Costs

SKM selected a sample of 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. SKM has reviewed bulk water costs, employee costs, corporate costs, electricity and chemical costs. This sample captures 86% of the total operational expenditure (see Table 44) over the forecast period.

**Table 44: Queensland Urban Utilities Operating Costs ($m)**

| *Cost Centre* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| *Bulk water* | 189.68 | 231.98 | 277.79 |
| *Corporate Costs* [a] | 96.07 | 100.24 | 104.46 |
| *Employee costs* | 38.89 | 41.09 | 43.31 |
| *Electricity* | 11.27 | 11.89 | 12.54 |
| *Chemicals* | 5.19 | 5.48 | 5.78 |
| ***Total Sample*** | **341.10** | **390.68** | **443.88** |
| ***Total Expenditure*** | **403.52** | **456.16** | **512.05** |

[a] *Does not align with the Authority's definition of corporate costs.*

*Source QUU (2010), SKM (2010)*

(a) Bulk Water Cost

SKM examined QUU's tariffs and noted that the bulk water tariffs charged to customers are consistent with those charged by the SEQ Water Grid Manager. SKM found that QUU's operating budget demonstrates that prices charged by the SEQ Water Grid Manager 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 Frontier Economics recommended adjustments to the volume of water sales forecast by QUU (see section 1.4) and made corresponding changes to bulk water purchases. SKM has accepted Frontier Economics' recommendations and has adjusted QUU's operating costs associated with the purchase of bulk water for 2010/11 (see Table 45). Bulk water costs for water decreased slightly in 2010/11 as a result of an estimated reduction of demand in Brisbane.

**Table 45: 2010/11 Bulk Water Costs**

| *Geographic Area* | *QUU Submitted Bulk Water Cost ($m)* | *QUU Submitted Demand (ML)* | *Revised Frontier Demand (ML)* | *Unit Price (/kL)* | *SKM Revised Bulk Water Cost ($m)* |
|---|---|---|---|---|---|
| Brisbane | 156.55 | 102,464 | 102,099 | 1.517 | 154.88 |
| Ipswich | 24.39 | 16,788 | 17,000 | 1.453 | 24.70 |
| Lockyer Valley | 2.49 | 1,459 | 1,442 | 1.710 | 2.47 |
| Scenic Rim | 2.64 | 1,378 | 1,497 | 1.817 | 2.72 |
| Somerset | 2.66 | 1,274 | 1,341 | 2.087 | 2.79 |
| **Total** | **188.73** | **123,362** | **123,378** | **n/a** | **187.57** |

*Source Frontier Economics (2010), QUU (2010), Queensland Water Commission*

On 5 December 2010, the Treasurer and Minister for Natural Resources, Mines and Energy and Minister for Trade announced a series of reforms to the SEQ water industry. Included in these

reforms was a revision to the long term bulk water price path from 2011/12. Bulk water prices for 2010/11 were unchanged. The Authority has revised the QUU bulk water expenditure in 2011/12 and 2012/13 to reflect these revised prices. These changes reduce the QUU bulk water expense by $10.29 million over the 3 year price monitoring period.

(b) Corporate Costs

Supporting information provided by QUU referred to 'Labour Corporate Allocations' and 'Materials and Services Corporate Allocations' which SKM added together to form an estimate of corporate costs. QUU subsequently identified these as labour, materials and service expenses for support services. SKM noted that these two categories (labour and materials and services) do not fully encompass the items to be included as corporate costs (as per Section 6 of the Information Requirements for 2010/11). SKM requested further information from QUU.

QUU indicated to SKM that it would require significant effort to provide the required level of disaggregation in the first monitoring period, largely due to time constraints. Hence, SKM noted the level of information provided is not sufficient to accurately determine corporate costs as per the QCA required definition.

SKM was unable to accurately identify the quantum of corporate costs contained in the materials and services category. As such, SKM was unable to review the reasonableness of 2010/11 corporate costs, and focused on the escalation factors applied by QUU to achieve 2011/12 and 2012/13 estimates.

SKM noted that QUU adopted a general cost escalation factor of 2.50% and did not apply a growth factor to these costs. SKM found this 2.50% rate to be lower than the average actual CPI over the last five years, but nonetheless a reasonable estimation. It is consistent with the CPI adopted by the Authority for regulatory purposes.

SKM found that further refinement of QUU's Financial Model is required to allow disaggregated data to be recorded against each of the cost categories for future price monitoring submissions.

SKM considered the amalgamation of the five council water businesses into QUU should ultimately achieve efficiency gains in service delivery, economies of scale and reduced corporate costs.

SKM considered that this is unlikely to occur over the 3 year price monitoring period as the costs associated with establishing QUU, including the establishment of new administrative processes and systems, would negate any efficiency gains and economies of scale.

However, it is likely that all such establishment costs will be able to be capitalised once Ministerial approval of them is received.

(c) Employee Costs

Under the Direction, the Authority must accept the operational constraints imposed by the SEQ Urban Water Arrangements Reform Workforce Framework 2010 (SEQ Framework). SKM noted the most significant constraint is that there are to be no forced redundancies or overall loss of employment directly as a result of the water reforms, during the reform period. Also, there are to be no forced relocations within 12 months from the date of transfer.

SKM noted that the operational constraints imposed by the SEQ framework limit the ability of QUU to achieve full labour efficiency.

The increase in QUU's employee costs (Table 44) were attributed by QUU to both an increase in employee numbers and labour cost increases.

QUU have in their submission nominated a growth in employee numbers of between 1% and 1.5% depending on geographic area, while the cost escalation rates for labour costs were set at 4.30% and 4.25% for 2011/12 and 2012/13 respectively.

In subsequent information provided to the Authority, QUU provided data indicating that total employee numbers had risen 1.04% in the year to date. As noted previously, QUU also identified that its submission already included savings in operating costs.

SKM benchmarked QUU's labour cost escalation index against both the historic ABS Labour Price Index for the hourly rates for public servants in the Electricity, Gas, Water and Waste Services and the AER's forecasts of wage price increases in the utilities sector (see Table 46).

SKM concluded that QUU's labour cost indices are in line with both the AER forecast indices and the historic trends as derived from the Labour Price Index. The labour cost indices are therefore considered reasonable. SKM also found that the growth factor used by QUU to determine employee numbers was reasonable to build required capability and service growth that is increasing at a higher rate.

The Authority notes that natural attrition should be a source of potential efficiencies even within the constraints of the SEQ framework, however the natural attrition of required skills will require replacement through training, relocation or other replacement.

However, given the savings already pursued by QUU, and in the absence of a readily available benchmark, the Authority has not sought to attribute quantifiable efficiency gains specifically to labour costs in this review. However, the Authority intends to pursue this issue further over the interim period, and an overall target for efficiency gains is discussed further below.

**Table 46: Comparison of Labour Cost Escalation Indices**

| | *2008/09* | *2009/10* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Queensland Urban Utilities | - | - | - | 4.30% | 4.25% |
| Australian Energy Regulator | 4.90% | 3.60% | 3.80% | 4.20% | 3.90% |
| ABS, Labour Price Index | 4.38% | 4.40% | | | |

*Source Australian Energy Regulator (2010), Australian Bureau of Statistics (2010)*

(d) Electricity Costs

SKM found that the electricity model used by QUU to develop the majority of its 2010/11 costs provides a comprehensive calculation of electricity costs by taking into account forecast water and wastewater flows, peak/off-peak splits and allowance for sourcing green energy. QUU subsequently indicated that the model included a cost escalation of 13.3% for 2010/11 across regulated tariffs and a price reduction of 1.5% across contestable market contracts. The fall in contestable market contracts was due to a fall in energy costs under a new contract that took effect in January 2011. Regulated tariffs make up 25% of the total 2010/11 expenditure on electricity, with the remaining 75% purchased under contestable market contracts.

However, the QUU electricity model only encompasses the Brisbane service area. For the other four service areas, the 2010/11 budget for electricity was as per the 'as is' council submitted budgets. Nonetheless, Brisbane accounts for 80% of QUU's 2010/11 electricity costs.

QUU indicated to SKM that the Brisbane model would be expanded to other service areas in future years. In this first information return, QUU did not use its electricity model for 2011/12 and 2012/13 forecasts. Instead, it has applied a cost escalation factor of 2.5% and a growth factor aligned to the percentage change in bulk water volumes (see Table 47).

**Table 47: QUU Electricity Costs ($m)**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Water | 1.32 | 1.39 | 1.47 |
| Wastewater | 9.95 | 10.50 | 11.07 |
| **Total** | **11.27** | **11.89** | **12.54** |

*Source QUU (2010),*

SKM benchmarked QUU's regulated tariffs against the Queensland Benchmark Retail Cost Index (BRCI) and the Australian Bureau of Statistics Consumer Price Index for electricity (see Table 48). SKM found that QUU's price escalation for regulated tariffs in 2010/11 (13.3%) is (broadly) consistent with both the BRCI (13.29%) and CPI for electricity (15.5%).

**Table 48: Electricity Cost Escalation Benchmarks**

| | *2008/09* | *2009/10* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| QUU – Contestable Market Contract Prices | - | - | -1.5% | 2.50% | 2.50% |
| QUU – Regulated Tariffs | - | - | 13.30% | 2.50% | 2.50% |
| BRCI | 5.38% | 11.82% | 13.29% | 5.83%[a] | |
| ABS CPI for electricity in Brisbane | 11.60% | 8.30% | 15.50% | | |

*Note [a] QCA BRCI Draft Decision (2010)*
*Source QCA (2010), Australian Bureau of Statistics (2010)*

The Authority notes that a weighted average of the 2010/11 price increases for QUU's Brisbane area electricity is 2.20%.[12] This is broadly consistent with QUU's forecast price increase of 2.5% in 2011/12 and 2012/13.

SKM noted that the type of electricity purchase arrangement will have significant impact on QUU's electricity costs. The Authority supports this view and notes that QUU should seek out the most efficient option within its regulatory and contractual obligations. In particular, if QUU chooses to continue to purchase (more expensive) green energy, it should demonstrate that there is sufficient customer support for the additional expenditure associated with this decision.[13]

The Authority released its Draft Decision on the 2011/12 BRCI on 17 December 2010, of 5.83%. Taking this into account, the Authority has calculated that to achieve a weighted average electricity price increase of 2.5% for 2011/12 as per QUU's submission, contestable

[12] 2.20% = (0.75 x -1.5) + (0.25 x 13.29)

[13] The Authority notes that in its 2009 review of Melbourne water prices, the ESC considered that green energy purchases of 10 to 20% of total energy to be efficient and that higher levels are acceptable where a business can demonstrate that there is sufficient customer support for the associated expenditure. The ESC accepted Melbourne Water's proposal to source 61% of total energy from renewable sources as it had conducted a willingness to pay study which showed support for this policy.

prices would need to increase by only 1.39%.[14] The Authority is prepared to accept QUU's forecast for 2011/12 and will track the change in electricity prices under contestable market contracts that are achieved. (Prior to the release of the Authority's Draft Decision on the 2011/12 BRCI, SKM estimated a 7.6% increase as reasonable – this view is now superseded by subsequent events.) The Authority has also accepted the 2.5% price increase for 2012/13.[15]

The Authority has revised QUU's growth forecasts to align with the percentage change in bulk water volumes arising from Frontier Economics' revised demand forecasts.

Revised electricity costs are presented in the Table 49.

**Table 49: Revised QUU Electricity Costs ($m)**

| | ***2010/11*** | ***2011/12*** | ***2012/13*** |
|---|---|---|---|
| Water | 1.33 | 1.41 | 1.50 |
| Wastewater | 9.95 | 10.58 | 11.25 |
| **SKM Total** | **11.28** | 11.99 | 12.75 |
| **QUU Proposed Total** | **11.27** | **11.89** | **12.54** |
| **Variance** | **0.09%** | **0.84%** | **1.63%** |

*Source SKM (2010), QCA (2010)*

(e) Chemical costs

Chemicals are used to treat drinking water before delivery to customers, and for wastewater prior to discharge. The need for chemical use is dictated by drinking water standards and compliance with operational licenses for wastewater discharge.

QUU's expenditure on chemicals is forecast to increase from $5.2 million in 2010/11 to $5.8 million in 2012/13. In determining these forecasts, QUU have used a general price escalation index of 2.5%.

SKM noted that transport costs are recognised as a significant cost component for chemicals (the cost of transporting chemicals to depots and throughout the distribution network).

The amalgamation of the five former council water businesses increases the purchasing power of QUU with potential efficiency gains or reduction in cost through economies of scale through the consolidation of supplier contracts and purchasing power.

In this regard, QUU has indicated that it has negotiated a chemical supply contract that covers all districts. This contract is for three years initially and with a price escalation clause based on CPI. Thus the cost escalation rate assumed by QUU of 2.5% is reasonable.

The growth factor applied by QUU to chemical cost is derived from the growth of bulk water demand, and has been revised as a result of Frontier's recommendations. The adjusted chemical costs for QUU are contained in Table 50.

[14] 2.5% = (0.75 x 1.39) + (0.25 x 5.83). This calculation assumes the same share of contestable market contracts (75%) in 2011/12 as in 2010/11. QUU should adopt the most efficient option.
[15] The Authority has not yet formed a view on the BRCI for 2012/13.

**Table 50: Revised Chemical Costs ($m)**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Water | 0.18 | 0.19 | 0.20 |
| Wastewater | 5.01 | 5.32 | 5.64 |
| **SKM Chemical Costs** | **5.19** | **5.50** | **5.84** |
| **QUU Submitted Costs** | **5.19** | **5.48** | **5.78** |
| **Variance** | **0.12%** | **0.48%** | **1.07%** |

*Source SKM (2010), QCA (2010)*

Efficiency Gains and Other Amendments

As noted above, QUU's submitted operating costs for 2010/11 already include $43 million of savings in non-bulk operating costs. As a result, the Authority has not imposed further efficiency targets for 2010/11.

The Authority notes that QUU has recently announced further cost savings targets of $5 million per annum in 2011/12 and 2012/13. These savings are not included in their original submission to the Authority. The Authority supports QUU's endeavours to find efficiency gains over the interim period and has included these gains in its revised estimates. The Authority has allocated the $5 million between water and wastewater based on their share of non-bulk operating costs.

However, the Authority notes that, even with these gains, SKM's analysis indicates there remains scope for further efficiency gains to bring QUU to the forefront of operating efficiency. Economic regulators in other jurisdictions have applied efficiency gains to water retail businesses of up to 3.5%.

The Authority expects that further operating efficiencies in non-bulk operating costs should be achievable over the remainder of the interim period. Further operating efficiencies of at least 2% per annum in non-bulk operating costs should be achievable in 2011/12 and 2012/13. This almost doubles the level of efficiency gains recently announced by QUU.

The Authority has therefore revised its estimates of operating expenditure for these years to include QUU's recently announced savings and this further efficiency target (see Table 51).

**Table 51: Further Efficiency Gains ($m)**

| | *2011/12* | *2012/13* |
|---|---|---|
| QCA efficiency target - water | -1.59 | -3.33 |
| QCA efficiency target - wastewater | -2.92 | -6.09 |
| Announced by QUU in late 2010 – allocated to water | -1.76 | -1.77 |
| Announced by QUU in late 2010 – allocated to wastewater | -3.24 | -3.23 |
| **Revised Total** | **-9.50** | **-14.42** |
| **QUU Proposed (Submission)** | - | - |

*Note QUU submitted costs include efficiencies of $43 million in 2010/11 costs*

The Authority notes that QUU did not include the Authority's regulatory fees in its operational expenditure forecasts. The Authority has included these regulatory fees in the revised operating costs, allocated on the basis of 2010/11 revenues. In addition to the Authority's fee, the Authority has also amended QUU regulatory and licence fees to include the newly established Queensland Water and Electricity ombudsman fees (see Table 52).

**Table 52: Revised QUU Licence and Regulatory fees ($m)**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Water | 0.40 | 0.49 | 0.53 |
| Wastewater | 0.39 | 0.45 | 0.46 |
| **Revised Total** | 0.79 | 0.94 | 0.99 |
| **QUU Proposed** | - | - | - |

Revised Operating Expenditure

The Authority's revised operating expenditure for QUU over the interim period for water and wastewater over are outlined in Tables 53 and 54 respectively. The Authority notes that QUU has already included $43 million in operating efficiency gains in its estimated costs for 2010/11. Therefore, the Authority has not imposed further efficiency targets on QUU for 2010/11, but has done so for 2011/12 and 2012/13.

For water, the Authority has reduced QUU's operating expenditure ($263.69 million) by 0.29% in 2010/11, mainly due to the reduced bulk water costs from Brisbane arising from Frontier Economics' revised bulk water demand forecasts. For wastewater, the Authority has increased QUU's operating expenditure ($139.83 million) by 0.27% mainly due to the inclusion of the Authority's and Ombudsman's regulatory fees.

**Table 53: Reasonable Operating Costs - Water 2010-2013 ($m)**

| | ***2010/11*** | ***2011/12*** | ***2012/13*** |
|---|---|---|---|
| Bulk Water Costs | 187.57 | 229.00 | 273.18 |
| Retail Operating Costs | | | |
| Customer service and billing | na | na | na |
| Regulated demand management costs | na | na | na |
| Community service obligation costs | na | na | na |
| Distribution Operating Costs | | | |
| Employee expenses | 12.92 | 13.65 | 14.39 |
| Contractor expenses | 0.13 | 0.13 | 0.14 |
| GSL payments | na | na | na |
| Materials and services (including electricity and chemicals) | 61.92 | 65.11 | 68.15 |
| Licence or regulatory fees | 0.40 | 0.49 | 0.53 |
| Natural resources management costs | na | na | na |
| Corporate costs | na | na | na |
| **SKM Total Operating Costs** | **262.93** | **308.38** | **356.40** |
| Efficiency gains | - | -3.35 | -5.10 |
| **Total Operating Costs** | **262.93** | **305.05** | **351.30** |
| **QUU Proposed Total** | **263.69** | **309.72** | **359.13** |
| Variance | -0.29% | -1.51% | -2.18% |

*Source SKM (2010), QCA (2010)*

**Table 54: Reasonable Operating Costs - Wastewater 2010-2013 ($m)**

| | *2010/11 ($ million)* | *2011/12 ($ million)* | *2012/13 ($ million)* |
|---|---|---|---|
| Bulk Water Cost | 0.94 | 1.13 | 1.31 |
| Retail Operating Costs | | | |
| Customer service and billing | na | na | na |
| Regulated demand management costs | na | na | na |
| Community service obligation costs | na | na | na |
| Distribution Operating Costs | | | |
| Employee expenses | 23.81 | 25.16 | 26.52 |
| Contractor expenses | 0.13 | 0.13 | 0.14 |
| GSL payments | na | na | na |
| Materials and services (including electricity and chemicals) | 114.94 | 120.13 | 125.19 |
| Licence or regulatory fees | 0.39 | 0.45 | 0.46 |
| Natural resources management costs | na | na | na |
| Corporate costs | na | na | na |
| **SKM Total Operating Costs** | **140.21** | **146.99** | **153.62** |
| Efficiency gains | - | -6.16 | -9.33 |
| **Total Operating Costs** | **140.21** | **140.83** | **144.29** |
| **QUU Proposed Total** | **139.83** | **146.44** | **152.93** |
| Variance | 0.27% | -3.85% | -5.65% |

*Source SKM (2010), QCA (2010)*

The cumulative impact of the Authority's revision to QUU forecast operational expenditure is a decrease of $27.12 million over the interim period (see Table 55). This represents a decrease of 1.98% on QUU's forecasts.

The Authority has adjusted for revised demand forecasts, bulk water prices, electricity costs, expected efficiency gains and regulatory fees, but notes these will be subject to ongoing review in 2011/12 and 2012/13. It is reasonable to expect that QUU may realise additional operational efficiencies in the future as it achieves economies of scale. The Authority also notes that there may be opportunities even within the constraints imposed by the SEQ workforce framework.

The Authority found that the level of disaggregation of cost was a significant impediment to the assessment of the reasonableness of the proposed expenditure. The Authority expects that in subsequent submissions that QUU will allocate costs to all relevant categories.

**Table 55: Comparison of QUU and Authority's operational expenditure for water and wastewater**

| | *2010/11* | *2011/12* | *2012/2013* | *Total* |
|---|---|---|---|---|
| QUU forecast | $403.52 | $456.16 | $512.05 | $1,371.73 |
| QCA forecast | $403.14 | $445.88 | $495.59 | $1,344.61 |
| **Difference** | **-0.09%** | **-2.25%** | **-3.21%** | **-$27.12** |

*Source QUU (2010) and QCA calculations.*

- **QUU's forecast operational expenses for 2010/11 are generally reasonable, as the Authority's current estimates are consistent with QUU forecasts which already include a $43 million reduction in operating costs. The Authority has adjusted for revised demand forecasts, bulk water prices, regulatory fees and electricity costs, but notes these will be subject to ongoing review.**
- **The Authority expects that QUU may realise further operational efficiencies in 2011/12 and 2012/13 as it achieves economies of scale and considers further potential efficiencies of 2% in non-bulk operating costs should be pursued in addition to the operating efficiency targets of $5 million per annum recently announced by QUU.**
- **The level of disaggregation of cost was a significant impediment to the assessment of the reasonableness of the proposed expenditure. The Authority expects that in subsequent submissions that QUU should allocate costs to all relevant categories.**

## 1.10 Costs

*Introduction*

The 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;

(c) return of capital, allowing for depreciation of assets over time.

The Direction also requires the Authority to take into account any revenue glide path submitted by the entity for the purpose of avoiding price shocks over the interim period. In its information request to the entities, the Authority requested full details of the method used for smoothing and for underlying data to be provided.

The impact of recent floods in SEQ has not been taken into account in this Draft Report.

*QUU's submission*

QUU's initial submission did not include an estimate of total costs for 2009/10 and 2010/11. However, the QUU data template provided information on bulk water costs and distribution and retail operating and maintenance costs, and the data to calculate tax, return on capital and return of capital for each activity from 1 July 2008. The Authority has used QUU's data template to estimate QUU's 2009/10 total costs, for broad comparative purposes.

Subsequently, QUU provided the Authority with its estimate of QUU's total costs for 2010/11 based on information available at the time of its submission to the Authority.

QUU indicated that its estimate of tax is based on including capital contributions as taxable income and a deduction for the deprecation of these assets. QUU indicated that it is likely to change this approach to reflect the approach prescribed by the updated local government tax equivalents manual which applies to the entities. This should occur as soon as possible as the current calculations are not correctly based.

QUU's estimate of 2010/11 costs at the time of price setting was essentially the same as that shown in Table 56, with a minor difference (less than 0.6% in total) arising from the use of capital expenditure 'as incurred' rather than 'as commissioned', minor data variations and modelling differences.

**Table 56: QUU Total Costs ($m)**

| | ***Costs 2009/10*** | ***%*** | ***QUU Costs 2010/11*** | ***%*** | ***QUU Water Costs 2010/11*** | ***%*** | ***QUU Wastewater Costs 2010/11*** | ***%*** |
|---|---|---|---|---|---|---|---|---|
| Bulk Water Costs | 148.36 | 16.64% | 189.67 | 19.5% | 188.73 | 38.9% | 0.94 | 0.2% |
| Distribution and Retail Costs | | | | | | | | |
| Other operating costs | 200.90 | 22.53% | 213.85 | 21.9% | 74.96 | 15.4% | 138.89 | 28.4% |
| + Tax | 31.13 | 3.49% | 14.90 | 1.5% | 6.01 | 1.2% | 8.89 | 1.8% |
| + Return on Capital | 369.25 | 41.42% | 400.86 | 41.1% | 166.68 | 34.3% | 234.18 | 47.9% |
| + Return of Capital | 141.88 | 15.91% | 155.12 | 15.9% | 48.94 | 10.1% | 106.18 | 21.7% |
| **Total Costs** | **891.52** | **100.00%** | **974.40** | **100.0%** | **485.32** | **100.0%** | **489.08** | **100.0%** |

*Source QUU data template and subsequent information – return on and of capital for 2009/10 are sourced from QUU's estimates of councils' cash flows statements. Return on capital in 2009/10 is the sum of interest, dividends and retained earnings and inflationary capital gain.*

*Authority's Analysis*

On the basis of the Authority's analysis of the regulatory asset base, asset lives, cost of capital, and operating and maintenance costs, the Authority has calculated the total costs of carrying on QUU's water and wastewater activities for 2010/11 (see Table 57).

In doing so, the Authority has calculated single year or 'unsmoothed' cost estimate, to allow for comparison with QUU's revenues and costs, which were predominantly set on this basis.

For both water and wastewater, the Authority's estimate of total costs lies below QUU's estimate. However, the difference is not large. For water, the Authority's estimate of total costs of $480.95 million is only 0.90% below that of QUU. For wastewater, the Authority's estimate of total costs $484.83 million is 0.87% below that of QUU.

**Table 57: Comparison of QUU and QCA Costs for 2010/11**

| | **Water QUU Costs** | ***Water QCA Costs*** | ***QCA % of total*** | **Wastewater QUU Costs** | ***Wastewater QCA Costs*** | ***QCA % of total*** |
|---|---|---|---|---|---|---|
| Bulk Water Costs | 188.73 | *187.57* | 39.00% | 0.94 | *0.94* | 0.19% |
| Distribution and Retail Costs | | | | | | |
| Other operating costs | 74.96 | *75.36* | 15.67% | 138.89 | *139.27* | 28.73% |
| + Tax | 6.01 | *0* | 0.00% | 8.89 | *1.68* | 0.35% |
| + Return on Capital | 166.68 | *169.67* | 35.28% | 234.18 | *238.49* | 49.19% |
| + Return of Capital | 48.94 | *48.35* | 10.05% | 106.18 | *104.45* | 21.54% |
| **Total Costs** | **485.32** | ***480.95*** | 100.00% | **489.08** | ***484.83*** | 100.00% |

*Source QUU subsequent information and QCA calculations.*

Key differences between QUU's submitted costs and the Authority's arise from:

(a) bulk water costs – the Authority has slightly lower bulk water cost estimates due to the Authority's revised demand volumes for 2010/11;

(b) other operating costs – the Authority has slightly higher estimates of other distribution and retail operating costs due to regulatory fees and electricity costs;

(c) tax – the Authority has a lower tax allowance for 2010/11, while QUU has a higher tax allowance as it included all capital contributions as taxable income. The Authority's tax calculations use only unallocated contributions as taxable income.

The Authority's approach to tax is consistent with that set out in the relevant tax manual for the entities, whereby the value of a contributed asset or the amount of the contribution towards an asset will not be assessable and no deductions of any kind will be allowed in respect of the value of the contributed asset or in respect of the amount of the contribution towards an asset (LGTER 2010);

(d) the return on capital – the Authority has slightly higher cost estimates than QUU, as a WACC of 9.2% was used by QUU compared with 9.35% for the Authority (Appendix B); and

(e) the return of capital – the Authority has slightly lower estimates than the entities arising from minor differences in the indexation of the underlying assets.[16]

## 1.11 Revenues for 2010/11

For price monitoring purposes, QUU's revenues as forecast at the time of price setting form the relevant forecast revenues. These revenue forecasts for 2010/11 are consistent with 2010/11 prices.

*QUU's submission*

QUU's revenue forecasts for water and wastewater (as at the time of price setting) are shown in Table 58.

**Table 58: QUU's 2010/11 Revenue Forecasts for water and wastewater ($m)**

| | ***QUU Revenues*** |
|---|---|
| Water | 366.08 |
| Wastewater | 352.85 |
| **Total revenue** | **718.93** |

*Source QUU subsequent information*

## 1.12 Comparing Revenues with MARs

Under the 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.

*QUU's submission*

QUU's estimate of its total costs of carrying on its water and wastewater activities in 2010/11 is presented in Table 59 below (these costs were first identified in section 1.9). QUU has chosen a revenue offset approach to the treatment of capital contributions.

A comparison of QUU's total costs and QUU's revenue forecast (at the time of price setting) is also provided in the table below. This comparison shows under-recovery in water activities being addressed through over-recovery in wastewater activities, with total over-recovery of $0.64 million or 0.09%.

[16] QUU had lower depreciation ($150.77m), higher tax ($36.97m) and higher return on capital ($410.03m) at the time of price setting. Estimates in their submission reflect more recent information and commissioned capex.

**Table 59: QUU's 2010/11 Total Costs and Total Revenues ($m)**

| | Water QUU 2010/11 | Wastewater QUU 2010/11 | Total |
|---|---|---|---|
| Total Costs (QUU) | 485.32 | 489.08 | 974.40 |
| - Indexation (QUU) | - 45.29 | -63.64 | -108.93 |
| - Capital contributions (QUU) | - 61.46 | - 85.71 | -147.17 |
| **Total Costs (QUU)[17]** | **378.57** | **339.73** | **718.30** |
| Total Revenues (QUU) | 366.08 | 352.85 | 718.94 |
| **Total Revenues - Costs (QUU)** | **-12.48** | **13.12** | **0.64** |
| **Per cent of Total Costs (QUU)** | -3.30% | 3.86% | 0.09% |

*Source QUU subsequent information*

*Authority Analysis*

A comparison of QUU's forecast revenues of its water and wastewater activities 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 Table 60.

The Authority's MAR is unsmoothed and based on 2010/11 total costs, and the revenue offset approach to the treatment of capital contributions is adopted, as per QUU's approach.

**Table 60: Comparison of QUU Revenues and the QCA MAR ($m)**

| | Water QUU 2010/11 | Wastewater QUU 2010/11 | Total |
|---|---|---|---|
| Total Costs (QCA) | 480.95 | 484.83 | 965.78 |
| - Indexation (QCA) | -46.05 | -64.25 | -110.30 |
| - Capital contributions (QCA) | -61.46 | -85.71 | -147.17 |
| **Total Costs (QCA MAR)** | **373.44** | **334.87** | **708.31** |
| Total Revenues (QUU) | 366.08 | 352.85 | 718.94 |
| **Total Revenues – Costs (QCA)** | **-7.36** | **17.98** | **10.63** |
| **Per cent of Total Costs (QCA)** | -2.01% | 5.10% | 1.48% |

*Source QCA calculations and QUU subsequent information.*

The Authority's analysis indicates that, as a whole, QUU's revenues exceed the Authority's maximum allowable revenue of $708.31 million by around $10.63 million (or 1.48%).

[17] Notwithstanding the differences in the cost components at the time of price setting to those in QUU's submission, the total costs estimated by QUU at the time of price setting ($720.86m) are not materially different from that calculated using more recently submitted data ($718.30m).

Water revenues fall below the MAR ($373.44 million) by around $7.386 million, or 2.01%. Wastewater revenues exceed the MAR ($334.87 million) by around $17.98 million – at 5.10% this is more material.

As a result, QUU's expected return on capital lies above the weighted average cost of capital – with an expected return of 9.60% compared to a WACC of 9.35%.[18]

## 1.13 Costs, Revenues and Prices

The reconciliation of costs, revenues and average prices is outlined in Table 61 below.

[18] Expected return = (QCA return on capital + over-recovery)/(opening RAB as at 1 July 2010 + half the prudent and efficient capex). For QUU: 9.60% = (408.15 + 10.63)/4,364.17.

**Table 61: Costs, Revenues and Prices**

| | *Council 2009/10* | *QUU Water 2010/11* | *QUU Wastewater 2010/11* | *QCA Water 2010/11* | *QCA Wastewater 2010/11* |
|---|---|---|---|---|---|
| Bulk Water Costs ($m) | 148.36 | 188.73 | 0.94 | 187.57 | 0.94 |
| Distribution and Retail Costs ($m) | | | | | |
| Other operating costs | 200.90 | 74.96 | 138.89 | 75.36 | 139.27 |
| + Tax | 31.13 | 6.01 | 8.89 | 0 | 1.68 |
| + Return on Capital | 369.25 | 166.68 | 234.18 | 169.67 | 238.49 |
| + Return of Capital | 141.88 | 48.94 | 106.18 | 48.35 | 104.45 |
| **Total Costs ($m)** | **891.52[a]** | **485.32** | **489.08** | **480.95** | **484.83** |
| - Indexation | - | - 45.29 | -63.64 | -46.05 | -64.25 |
| - Capital contributions | - | - 61.46 | - 85.71 | -61.46 | -85.71 |
| **Total Costs (MAR)** | **-** | **378.57[b]** | **339.73[b]** | **373.44** | **334.87** |
| **Total Revenues** | **630.12** | **366.08[c]** | **352.85[c]** | **n/a** | **n/a** |
| **Over / (Under) recovery** | **-** | **-12.49** | **13.12** | **n/a** | **n/a** |

| | *2009/10 Water* | *2009/10 Wastewater* | *QUU Water 2010/11* | *QUU Wastewater 2010/11* | *QCA Water 2010/11* | *QCA Wastewater 2010/11* |
|---|---|---|---|---|---|---|
| Total Revenues/MAR ($m) | 319.66 | 310.46 | 366.08 | 352.85 | 373.44 | 334.87 |
| Volume (ML or connections)[d] | 107,470 | 499,111 | 108,064 | 506,056 | 108,080 | 492,628 |
| **Price ($/kL or $/connection)** | **$2.97/kL** | **$622.03** | **$3.39/kL** | **$697.25** | **$3.46/kL** | **$679.76** |

*Notes [a] The Authority has not calculated a MAR for 2009/10 as per its Framework Report (April 2010). [b] QUU costs as per their submission to the Authority and subsequent information. [c] QUU revenues at the time of price-setting. [d] 2009/10 council volumes calculated using QUU 2010/11 data and growth assumptions. Source QCA calculations and QUU subsequent information.*

## 1.14 Findings

For QUU:

(a) average retail water and wastewater prices in 2010/11 increased by 13.9% and 12.1% respectively;

(b) residential bills for households using 200kl of water per year increased across all council areas, except for Somerset where the total bill fell by $7.08;

(c) bulk water costs account for 38.9% of QUU's proposed total water costs in 2010/11. Retail and distribution operating costs account for 15.4%, return on capital accounts for 34.3%, tax for 1.2% and return of capital 10.1%;

(d) for wastewater, retail and distribution operating costs account for 28.4% of QUU's proposed total costs, return on capital accounts for around 47.9%, tax for 1.8%, and return of capital about 21.7%; and

(e) the most significant increases in proposed costs in 2010/11[19] relate to a 27.8% increase in bulk water costs and a 8.7% increase in the return on capital (based on a comparison of councils' interest, dividend payments and retained earnings to QUU's forecast return on capital after including a forecast marginal over-recovery in 2010/11 of total costs).

The Authority's estimate of the costs of supply in 2010/11 is marginally (1.7%) lower than QUU's. Although the Authority has a higher return on capital (due to a higher WACC), this is more than offset by the Authority's lower tax allowance, and lower return of capital and bulk water costs. In this regard:

(a) QUU's forecast water revenues of $366.1 million is marginally below the MAR of $373.44 million calculated by the Authority;

(b) QUU's forecast wastewater revenues of $352.8 million are marginally above the MAR of $334.87 million calculated by the Authority;

(c) as a whole, QUU's revenues of $718.9 million marginally exceed the MAR of $708.31 million calculated by the Authority.

[19] As previously noted, the Authority has not reviewed costs for 2009/10.

# 2. ALLCONNEX WATER

## 2.1 Ministerial Direction

Under the Ministerial Direction, the Authority must inform customers of the costs and other factors underlying the annual increase in water and wastewater prices, and distinguish the bulk and distribution/retail components to the extent that it is possible given the availability and reliability of relevant information (**Appendix A**).

The Authority must also monitor the revenues of Allconnex Water's (Allconnex's) water and wastewater activities against the maximum allowable revenue (MAR) determined by the Authority based on prudent and efficient capital and reasonable operating costs. Further, the Authority must advise the entities by 1 March 2011 and 1 March 2012 of the WACC benchmark it will consider in 2011/12 and 2012/13 respectively.

## 2.2 Background

Allconnex provides water and wastewater to 933,404 people in the Logan, Redland and Gold Coast local government areas.

Key characteristics of Allconnex's customer base and proposed capital expenditure appear in Table 1 below.

**Table 1: Allconnex's Customer Base and Proposed Capital Expenditure for 2010/11**

| | ***Gold Coast*** | ***Logan*** | ***Redland*** | ***Total*** |
|---|---|---|---|---|
| Population[a] | 515,157 | 277,556 | 140,691 | 933,404 |
| Residential Water Connections | 214,189 | 90,928 | 57,556 | 362,673 |
| Non-Residential Water Connections | 16,020 | 18,309 | 1,662 | 35,991 |
| Wastewater treatment plants | 4 | 1 | 7 | 12 |

[a]*Estimated residential population at 30 June 2009*
*Source Allconnex (2010), OESR(2010), Synergies Economic Consulting (2009)*

A map showing the area serviced by Allconnex is shown in Figure 1 below.

**Figure 1: Allconnex Service Area**


*Source Allconnex*

## 2.3 Prices

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

As noted previously, the Authority has not sought to review prices (or tariff structures) in detail in this first review but, for broad comparative purposes, notes the changes in average prices and residential bills. Average prices provide, at best, a broad overview of price changes.

*Average Prices*

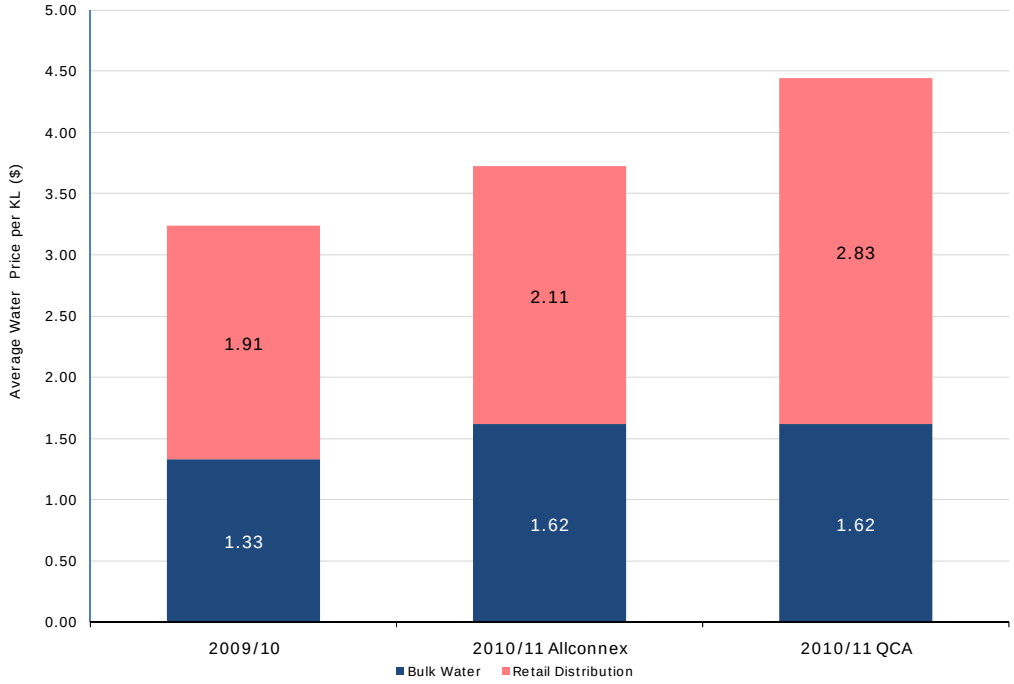
Allconnex's average water and wastewater prices increased across all customer groups in 2010/11. For reasons identified further below, the average price charged by Allconnex differs from that implied by the Authority's analysis. Charts 1 and 2, and Table 2 refer.

As noted previously, prices are not necessarily set by the entities on the basis of costs alone. Allconnex has advised that it took other factors (including the avoidance of price shocks) into account. The Authority's previous monitoring of councils' prices indicated that councils did not always base prices on costs in previous years.

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

Average prices have been calculated by dividing total revenues by volumes – per kL (for water) and per connection (for wastewater).[20] Allconnex's average price reflects its decision to limit price increases for individual services to 20% in 2010/11 to ameliorate customer impacts. Allconnex has also indicated that it will recover costs over a ten year period.

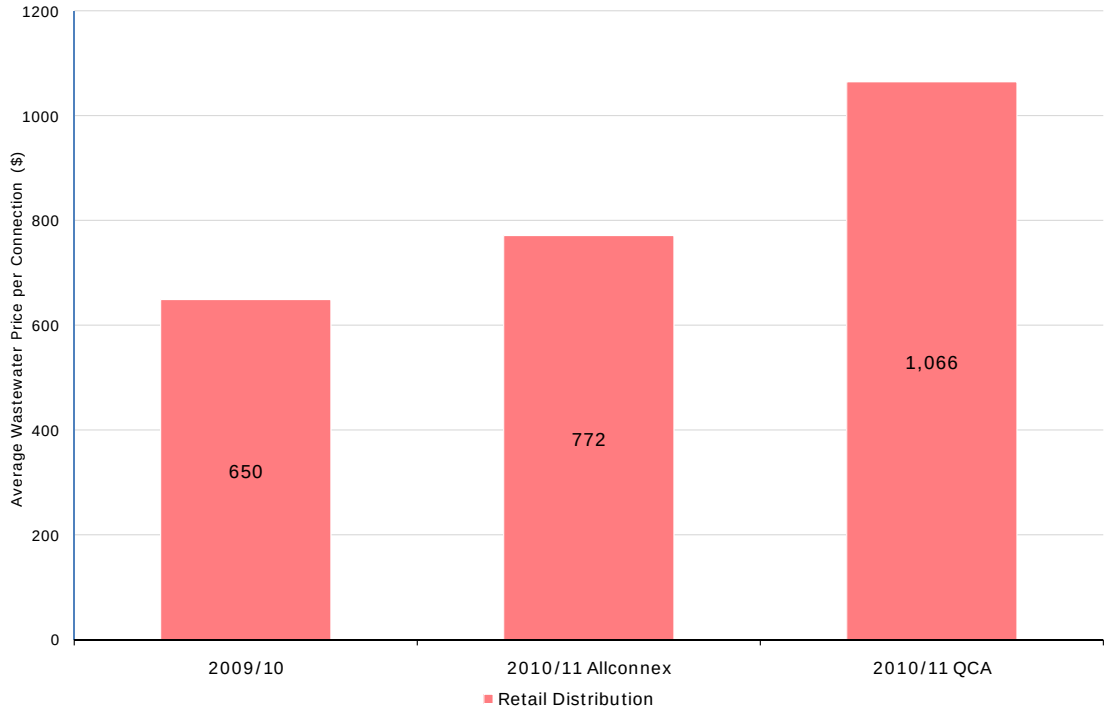
**Chart 1: Average Water Prices**




*Source Allconnex (2010), QCA calculations (see section 2.13)*

[20] The 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: Average Wastewater Prices**




*Source Allconnex (2010), QCA calculations (see section 2.13)*

**Table 2: Average Prices[ab]**

| | ***2009/10*** | ***Allconnex 2010/11*** | ***QCA 2010/11*** |
|---|---|---|---|
| Water ($/kL) | 3.24 | 3.73 | 4.45 |
| % increase | | 15.12% | 37.33% |
| Wastewater ($/connection) | 649.68 | 772.35 | 1,066.02 |
| % increase | | 18.88% | 64.08% |

*[a] Average water price = Annual water revenue ($) / total kl sold . [b]Average wastewater price = Annual wastewater revenue ($) / total connections. Average QCA price = QCA MAR / QCA kL(water) or connections (wastewater)*

As evident from the above table, the Authority's analysis suggests higher average annual water prices of $4.45/kL could be justified on the basis of costs alone for water. For wastewater, average prices also appear low when considered against the Authority's assessment of costs.

The Authority's average price is based on 2010/11 costs alone (the Authority's MAR). The Authority's average price for 2010/11 reflects full costs estimated on an annual basis. Ideally, prices should be set, and smoothed, over a longer period to avoid large annual variations.[21]

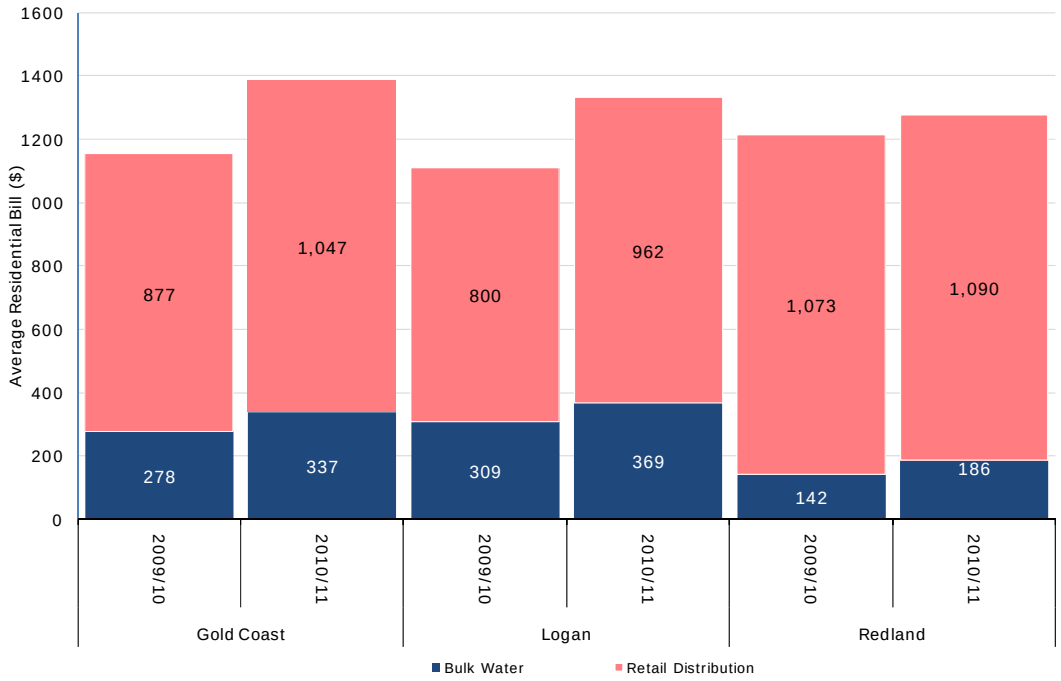
[21] See the Authority Final Report *SEQ Interim Price Monitoring Framework* (April 2010).

*Residential Bills*

Total residential bills for households increased across all Allconnex geographic areas (Chart 3). Bill increases ranged from an increase of $61 in Redland up to $229 in Gold coast.

The residential bills used in the Authority's analysis have been estimated on the basis of usage of 200kl of water per year, as this is the basis adopted for national performance reporting and allows for a broad comparison of bills across different areas (NWC 2010). As there is no national standard for wastewater, the analysis has been based on the approach adopted in each council area. All council areas adopt a fixed residential access charge except in Logan for multi-residential accommodation where one pedestal was assumed.

**Chart 3: Total Residential Bills**




*Notes Based on usage of 200kL per annum and one pedestal. The retail/distribution component includes water and wastewater. Logan data refers to non-transferred areas.*

Bulk water accounts for a smaller proportion of residential bills than for average water prices as the residential bill includes water and wastewater, and wastewater has no bulk water component.

The Authority did not calculate a residential bill consistent with Authority estimates of efficient costs in 2010/11, as the Authority's assessment of costs in this review period has only been able to be undertaken on an aggregate basis, rather than by customer group as there is no alignment of costs with individual tariffs.

## 2.4 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. Details of those standards are addressed further below.

Estimates of demand for water and wastewater have a direct impact on the prudency and efficiency of operating and capital expenditure.

*Allconnex's submission*

In its submission Allconnex stated that its key assumptions in forecasting demand include: growth in customer connections of 2.4% per annum, growth in water volumes of 2.1% per annum and growth in wastewater volumes of 1.7% over the period to 2015. Subsequent information provided by Allconnex has confirmed that the demand estimates in their submission are the same as those at the time of price setting.

Allconnex noted that over the period to 2030, it expected its total customer connections to grow from just under 400,000 to around 600,000, an increase of nearly 50%. Over this period, the proportion of residential and non-residential customers is expected to remain relatively stable.

Allconnex stated that in forecasting future water sales it considered historical metered sales, metered water, current water restrictions, QWC water consumption targets, average day demand from desired standards of service, demand analysis modelling, water usage behaviour, customer composition, system losses and growth patterns.

Allconnex stated that while prices have increased significantly in the last three years and will continue to do so in the future, price elasticity has not been considered in Allconnex's demand forecasts. Allconnex noted that further research is required to reliably estimate a price-elasticity coefficient and protocols for the application of this coefficient.

*Authority's Analysis*

The Authority engaged Frontier Economics (Frontier) to review the appropriateness of Allconnex's demand forecasts for water and wastewater activities from 1 July 2010. Frontier was required to determine whether the demand forecasts have been developed using appropriate forecasting methodologies and reflect reasonable data assumptions.

General Approach

Frontier reviewed the key drivers of demand. In addition to those set out by Allconnex in their submission, Frontier noted that dwelling demographics and prices and pricing structure can also affect demand.

Frontier considered that the relevance of each driver should be determined using a progressive selection process that takes into account the statistical significance of each variable.

Data Adequacy

The Authority requested data on past and forecast demand by deemed category from the entities in its information requirement for 2010/11. In particular, the Authority requested that the entities provide a demand forecast for each tariff or tariff component be provided.

In undertaking its review, Frontier noted that SEQ water has recently undergone significant structural reform and, while such reform is expected to ultimately benefit water users, relevant historical data is not always available or has not been transferred from councils to the entities making forecasting difficult.

Frontier noted that Allconnex had stated that the forecasts have been adopted from the previous councils and are an interim measure until such time that Allconnex is able to develop its own forecasts.

In respect of data, the Authority considers that it would be prudent for Allconnex to collect data on the demand corresponding to each component of prices, as this data is generated at any rate for billing purposes and could form a useful base for future forecasts – and particularly when tariff structures are to be reviewed. This data will be expected in future years.

Further to this, Frontier noted that an independent review of demand for regulatory purposes typically requires a written description of the forecasting method, including the key issues addressed and assumptions adopted. Consistency between the demand estimates used for forecasting revenue and for capital planning should be documented, with any differences between the two approaches and values explained and made transparent.

Frontier noted that, while Allconnex had not formally documented its forecasting methods, Allconnex advised that its long term forecasting is a more complex process that involves input from water engineers and network planners. This process is different from how Allconnex forecasts their demand for revenue. Frontier also noted that Allconnex adopts a number of different assumptions between the two, the most important being that it assumes a higher per person per day consumption level for long-term forecasting than it does for short-term forecasting.

**The Authority considers that Allconnex should document the method and approach undertaken in preparing its demand forecasts. Any differences between the forecasting approaches used for pricing and capital planning should be clearly identified and explained.**

Residential Connections

Given the majority of Allconnex's revenues derives from residential usage, Frontier first assessed residential connections and growth, and then corresponding volumes.

Frontier used the growth in private dwellings from the PIFU's May 2010 forecasts to review residential connections. Frontier noted that PIFU lies within the Queensland Government's Office of Economic and Statistical Research (OESR), and this unit provides transparent and rigorous analysis of population dynamics and forecasts based on statistical analysis to clients at all levels of government and in the private sector. PIFU provides the Government's official population forecasts.

Frontier noted that alternative (or complementary) benchmarks could include those from:

(a) historical data from the QWC (2008-2010). However, Frontier noted that this data is not consistent over time due to significant local council restructuring that occurred in 2008. In addition, the data is unaudited billing data and as result may contain errors relating to billing and meter reading. As a result, Frontier considered this historical data a relevant point of comparison with Allconnex forecasts, while preferring PIFU's forward-looking forecasts;

(b) the SEQ Regional Plan 2009-2031 (the Plan) which provides dwelling projections from 2006 to 2031. However, the Plan's projections are a policy target rather than an actual forecast, and are more aggregated than PIFU's. Therefore, Frontier preferred PIFU rates;

(c) the WGM. The South East Queensland Market Rules require the WGM to issue grid instructions to bulk suppliers that specify the volume of water to be made available at each bulk supply point. Under the system operating plan made under the *Water Act 2000*, grid instructions must be based on an approved operating strategy, which must detail how

the WGM intends to supply water to meet the forecast demands of each of its customers. The operating strategy was not available at the time of the Authority's assessment.

**The Authority accepts Frontier's view that PIFU growth rates are the most reliable independent estimates of connections growth currently available.**

Residential Connections – Allconnex Estimates

Frontier noted that Allconnex was the only entity that was able to provide connections data for 2008-10 (see Table 3).

**Table 3: Allconnex Water Connections – residential**

| | *2008/2009* | *2009/2010* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Gold Coast | 208,108 | 211,944 | 214,189 | 220,292 | 226,583 |
| Logan | 86,957 | 89,032 | 90,928 | 92,901 | 94,917 |
| Redland | 56,372 | 56,333 | 57,556 | 58,132 | 58,713 |
| **Total** | **351,437** | **357,309** | **362,673** | **371,325** | **380,213** |

*Source Allconnex (2010) data template*

Frontier compared Allconnex's growth in residential connections with PIFU 2010 dwellings growth and historical trends based on council data from the QWC. Frontier considered that Allconnex had forecast relatively low growth in connections over 2010-13 compared to estimates by PIFU. This was particularly prevalent for Gold Coast, where Allconnex reduced the growth rate in light of historical data showing lower growth trends and Redland where a lower growth rate has been applied reflecting council's current development policies (see Table 4).

**Table 4: Allconnex residential annual growth rates (%)[22]**

| *LGA* | *QWC 2008-10 Connections* | *Allconnex 2008-10 Connections* | *Allconnex 2010-13 Connections* | *PIFU 2006-16 Dwellings* |
|---|---|---|---|---|
| Gold Coast | 0.7 | 1.5 | 2.3 | 3.0 |
| Logan | 3.2 | 2.3 | 2.2 | 2.4 |
| Redland | 1.7 | 1.0 | 1.4 | 2.4 |

*Source QWC historical data, Allconnex 2010 data template, PIFU (2010)*

Frontier recommended that growth rates based on PIFU forecasts of household connections be adopted. Frontier noted that while these forecasts differ from the QWC and Allconnex historical trend, historical data relates to a relatively short time period of two years and may be less reliable given structural changes in local government areas. Frontier also requested the basis for the lower Redland growth estimate. Allconnex requested this information from council but it was not provided.

[22] Growth rates are the annual average compound rates.

The Authority has accepted Frontier's approach and estimates in its review of capital and operating expenditure (see Table 5).

**Table 5: Allconnex Water Connections Amended – residential**

| | ***2010/11*** | ***2011/12*** | ***2012/13*** |
|---|---|---|---|
| Gold Coast | 218,244 | 220,556 | 226,841 |
| Logan | 91,173 | 94,027 | 96,971 |
| Redland | 57,711 | 59,124 | 60,571 |
| Total (Frontier) | 367,128 | 373,708 | 384,383 |
| Total (Allconnex) | 362,673 | 371,325 | 380,213 |
| **Difference** | **4,455** | **2,383** | **4,170** |

*Source Frontier (2010)*

**The Authority considers that residential connections for water should be based on PIFU forecasts.**

Water Volumes

Frontier noted that Allconnex have based forecasts of water volumes on assumptions of average usage and growth factors. Residential average usage (l/p/day) varies across each council area (Table 6). Allconnex forecast total residential water demand using assumed average residential water usage per person per day and population data (Table 7). Growth in residential water volumes is based on forecast population growth.

Allconnex noted that with the relaxation of water restrictions the Gold Coast district has experienced some bounce back towards pre-water restrictions usage. Further, Allconnex noted that this was exacerbated by hot, dry and dusty weather conditions in late 2009.

**Table 6: Allconnex assumptions regarding per person per day (litres)**

| | ***2008/2009*** | ***2009/2010*** | ***2010/11*** | ***2011/12*** | ***2012/13*** |
|---|---|---|---|---|---|
| Gold Coast | - | - | 215 | 210 | 210 |
| Logan | - | - | 190 | 200 | 200 |
| Redland | - | - | 200 | 200 | 200 |

*Note Based on total population not connected population. Source Frontier (2010)*

**Table 7: Allconnex Residential Water Demand (ML/year)**

| | 2008/2009 | 2009/2010 | 2010/11 | 2011/12 | 2012/13 |
|---|---|---|---|---|---|
| Gold Coast | 30,096 | 39,144 | 40,955 | 41,242 | 42,300 |
| Logan | 13,650 | 15,487 | 17,203 | 18,583 | 18,966 |
| Redland | 9,868 | 10,017 | 10,379 | 10,510 | 10,605 |
| **Total** | **53,614** | **64,648** | **68,537** | **70,336** | **71,871** |

*Note Residential water demand (ML/year) = litres per person per day x population x 365/1,000,000. Source Frontier (2010).*

The Authority notes that Allconnex's daily residential usage (Table 6) is calculated in a different way to the QWC and other entities' estimates. Allconnex's daily residential usage is based on the total population, as opposed to the connected population that is serviced by the water network. The connected population is less than the total population.

The Authority has therefore calculated Allconnex's assumption of daily residential usage based on its connected population (Table 8). The data in Table 8 can then be compared with other available (QWC) data on residential usage.

**Table 8: Allconnex assumptions regarding per (connected) person per day (litres)**

| | *2008/2009* | *2009/2010* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Gold Coast | 172 | 220 | 228 | 223 | 222 |
| Logan | 154 | 170 | 185 | 196 | 196 |
| Redland | 184 | 187 | 190 | 191 | 190 |

*Note Litres per person per day = Allconnex residential water demand (ML/year) x 1,000,000 / (Allconnex's connections x residential occupancy rates x 365)*

The Authority notes that its calculation of Allconnex's daily residential usage differs from the Target 200 (l/p/day) and the infrastructure planning assumption of 230 l/p/day in the SEQ Water Strategy.

The QWC has advised that the SEQ Water Strategy assumptions are macro level regional forecasts designed to inform long term planning decisions and are not relevant to pricing decisions made by individual distributors-retailers. QWC stated that it is questionable whether or not there is any correlation between these macro demand forecasts and hydrological assessments and localised demand forecasts developed by retailers. QWC stated that localised demand forecasts would be more relevant in assessing the impact of demand on the water distribution and sewerage networks.

Frontier noted that average SEQ water consumption in 2010 has been below 200 L/p/day. Frontier was unable to comment on the appropriateness of Allconnex's assumed daily residential usage given the lack of historical data extending back to pre-restriction years.

The Authority notes that QWC subsequently provided 2009/10 data showing average residential use of 181 L/p/day across Allconnex's service area. The Authority notes this appears low compared to the Allconnex data for 2009/10.

Frontier noted that the Allconnex forecasts show a number of differing trends for each council area. For the Gold Coast, consumption peaks in 2010/11 and is expected to fall over the interim period. The Authority notes that all water restrictions for residents of the Gold Coast were lifted in January 2009 and permanent water restrictions were introduced in late 2009. Allconnex submitted that dry and dusty weather conditions in late 2009 significantly increased usage in 2009/10 and its forecasts for 2010/11 (despite permanent restrictions).

For Logan, Allconnex expected consumption to increase to 2011/12. For Redland, consumption is relatively constant over the period.

Frontier noted that the rate at which customers respond to permanent water restrictions given the structural efficiencies now in place will be a key factor in water demand over the period.

Frontier also noted that Allconnex had not applied price elasticity of demand estimates to volume forecasts. Frontier considered that elasticity estimates were relevant to Allconnex, as discretionary use will increase as restrictions remain relatively relaxed. As a result, customers will be more responsive to price increases, although the absolute price elasticity will remain quite low. Based on a number of studies of urban water use, Frontier noted a range of potential elasticity estimates from 0.05 to 0.51.[23]

However, Frontier noted that Allconnex's prices in 2011/12 and 2012/13 do not represent actual price paths and it is methodologically unsound to apply price elasticity estimates in the absence of actual proposed prices. The Authority notes the wide range of estimates for elasticity, and considers that an estimate relevant to SEQ should be developed by entities over the interim period for projections of demand.

Allconnex also noted that a further complication for the application of elasticity for users is that the *Residential Tenancies and Rooming Accommodation Act 2008* provides that tenants in properties in SEQ do not in most cases receive water or wastewater bills (which are sent to landlords). Allconnex estimated that in the Gold Coast district, many properties are either tenanted or tourist rentals and subsequently those using water do not receive water bills.

In view of the above considerations, Frontier recommended Allconnex's forecast residential volumes only be amended for the updated PIFU growth rates (see Table 9). Frontier also recommended that Allconnex's demand forecasts be adjusted for price elasticity of demand in future reviews once forecast prices and price components are provided along with corresponding demand estimates.

[23] A price elasticity of 0.05 means that for every 1% increase in price, demand falls by 0.05%. Frontier noted a range of international and Australian studies on the price elasticity of demand.

**Table 9: Allconnex Residential Demand for Water (Amended) (ML/year)**

| | 2008/2009 | 2009/2010 | 2010/11 | 2011/12 | 2012/13 |
|---|---|---|---|---|---|
| Gold Coast | 30,096 | 39,144 | 41,730 | 41,292 | 42,348 |
| Logan | 13,650 | 15,487 | 17,249 | 18,808 | 19,376 |
| Redland | 9,868 | 10,017 | 10,407 | 10,689 | 10,940 |
| Allconnex (Frontier) | 53,614 | 64,648 | 69,387 | 70,790 | 72,665 |
| Allconnex (Allconnex) | 53,614 | 64,648 | 68,537 | 70,336 | 71,871 |
| **Difference** | **na** | **na** | **850** | **454** | **794** |

*Note Amended residential water demand (ML/year) = litres per person per day x residential occupancy rate x number of connections x 365 / 1,000,000.*
*Source Frontier (2010)*

The Authority accepts Frontier's recommendations for 2010/11. The Authority also considers that tariff structure will be a very significant determinant of demand. No changes in tariff structure were made in 2010/11 pending the development of approved pricing principles.

The Authority notes that Allconnex's estimates of residential water volumes are broadly confirmed by Frontier's analysis, with Frontier increasing volumes by 1.18% in 2010/11 to 0.63% in 2012/13. The Authority considers that Frontier's approach represents the best available estimate of demand and therefore has accepted Frontier's estimates in its review of capital and operating expenditure.

**The Authority accepts Frontier's residential water demand estimates.**

Wastewater

Allconnex's estimates of residential wastewater connections are shown in the Table 10 below.

**Table 10: Allconnex Wastewater Connections - residential**

| | *2008/09* | *2009/10* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Gold Coast | 199,152 | 199,300 | 201,000 | 206,810 | 212,802 |
| Logan | 76,619 | 76,883 | 78,548 | 80,386 | 82,266 |
| Redland | 47,068 | 47,945 | 49,068 | 49,559 | 50,055 |
| **Total** | **322,839** | **324,128** | **328,616** | **336,755** | **345,123** |

*Source Allconnex (2010)*

In line with the approach used in its analysis of residential water usage, Frontier adjusted wastewater connections forecasts to reflect the same growth rate as water connections. Frontier noted that Allconnex is not proposing to introduce volumetric charges for wastewater and therefore there is no need for Allconnex to produce wastewater volumetric forecasts at this stage.

Frontier's adjustments result in an increase of 1.3% for 2010/11, 0.3% in 2011/12 and 0.3% in 2012/13 (see Table 11).

**Table 11: Allconnex Amended Wastewater connections - residential**

| | *2008/09* | *2009/10* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Gold Coast | 199,152 | 199,300 | 205,225 | 206,975 | 212,958 |
| Logan | 76,619 | 76,883 | 78,732 | 80,437 | 82,319 |
| Redland | 47,068 | 47,945 | 49,117 | 50,247 | 50,771 |
| Allconnex (Frontier) | 322,839 | 324,128 | 333,074 | 337,680 | 346,049 |
| Allconnex (Allconnex) | 322,839 | 324,128 | 328,616 | 336,755 | 345,123 |
| **Difference** | **-** | **-** | **4,458** | **925** | **926** |

*Source Frontier (2010)*

**The Authority accepts Frontier's residential wastewater demand estimates.**

Non-residential and Trade waste

Frontier noted that it was initially unclear how Allconnex derived non-residential growth in connections. Based on further discussions, Allconnex stated that both the Gold Coast and Logan non-residential property forecasts were based on PIFU 2008 medium series population growth, with adjustments in certain instances. For example, a lower growth rate was applied by Gold Coast in 2010-11 to account for the impact of the global financial crisis.

Frontier noted that no data for trade waste was provided by Allconnex.

Unlike residential water connections, Frontier was unable to obtain historical data from alternative sources. Frontier did not have access to the data needed to generate an alternative estimate despite requesting this from Allconnex.

Recycled Water

Frontier noted that insufficient information was available for recycled water for Frontier to make an assessment. Frontier stated that Allconnex indicated that it will consider this issue as part of its ongoing business planning and improvement plan.

In the absence of historical data or alternative sources of data, Frontier is unable to provide alternative forecasts to those proposed by Allconnex.

**The Authority accepts Allconnex's forecasts but also accepts Frontier's finding that Allconnex should develop short-term forecasts for trade waste customers and recycled water for future years.**

Summary

Demand estimates are an essential component of economic regulation. 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 of data from the councils.

The Authority has adjusted Allconnex's residential connections for water and wastewater and residential volumes for water to reflect PIFU forecasts. Nonetheless, the Authority notes that these (revised) estimates broadly confirm Allconnex's estimates for 2010/11.

The Authority considers that prior to the next price monitoring period, Allconnex should document its approach to forecasting demand for all purposes, and establish procedures and protocols for the collection and collation of data, including:

(a) connections for residential and non residential water users;

(b) connections for wastewater customers (residential, non-residential, recycled water customers and trade waste customers); and

(c) volumetric consumption for residential and non-residential customers for potable water, recycled water and trade waste.

The Authority also considers that Allconnex should also take into account the response of consumers to increasing prices (that is, estimate the elasticity of demand) which estimating future consumption patterns.

## 2.5 The Initial Regulatory Asset Base

*Introduction*

In March 2010, the Minister for Natural Resources, Mines and Energy and the 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.

The Authority engaged SKM to review the method used by the entities to apportion the advised RAB to the each deemed category and its implementation.

*Allconnex Submission*

Allconnex has apportioned its initial RAB of $3.56 billion to each deemed category (see Table 12). Allconnex has used the pro rata approach under which the advised RAB is apportioned to existing asset values on the basis of their audited values.

Allconnex also allocated $260,000 of Gold Coast's assets to plant and equipment used to deliver non-regulated services (see Table 12). Allconnex subsequently indicated that these assets include laboratory information systems, and their allocation to non-regulated services is required as the Minister's 1 July 2008 RAB was derived from an entity wide value, from which bulk assets were deducted. This resulted in a value that did not exclude any non-regulated assets. Allconnex Water therefore deducted these (non-regulated) assets from the 1 July 2008 RAB in its submission.

**Table 12: Allconnex RAB as at 1 July 2008 ($m)**

| | *Water* | *Wastewater* | *Non-regulated Services* | *RAB* |
|---|---|---|---|---|
| Gold Coast City Council | 849.72 | 1,281.18 | 0.26 | 2,130.90 |
| Logan City Council | 435.15 | 570.28 | | 1,005.43 |
| Redland Council | 172.08 | 248.86 | | 420.94 |
| **Allconnex** | **1,456.95** | **2,100.37** | **0.26** | **3,557.27** |

*Note RAB = water + wastewater assets. Source Allconnex (2010)*

*Authority Analysis*

SKM noted that the total value of assets in Allconnex's submission (including non-regulated assets) was consistent with the Minister's advised asset values. SKM further confirmed that the RABs for each council area were apportioned to individual asset values based on their audited values, as recommended in the Authority's *SEQ Framework Report* and *Information Requirements for 2010/11* and endorsed by Government in the Ministerial Direction.

The Authority has therefore accepted Allconnex's apportionment of the Minister's advised RAB. The Authority notes that the exclusion of assets relating to non-regulated services (including competitive laboratory services) from the regulated asset base is consistent with the framework for price monitoring under which non-regulated services are excluded from detailed regulatory review.

**The Authority has accepted Allconnex's apportionment of the Minister's advised RAB including the adjustments proposed by Allconnex.**

## 2.6 Capital Expenditure

*Capital Expenditure from 1 July 2008 to 30 June 2010*

The Direction requires the Authority to accept as prudent and efficient, actual capital expenditure (excluding establishment costs) as included in councils' financial accounts from 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 from 1 July 2008 to 30 June 2010.

Allconnex's submission

In its submission, Allconnex stated that the capital expenditure for 2008/09 was $261 million and for 2009/10 was $280 million which included $36 million in establishment costs. Allconnex's capital expenditure included contributed, donated and gifted assets and capital expenditure funded through cash contributions.

Authority's Analysis

SKM noted that Allconnex allocated capital expenditure to only three of the seven categories (drinking water, wastewater via sewer and trade waste). SKM requested further disaggregated information from Allconnex and, in response, Allconnex noted that it is not able to populate this

section of the template as councils did not previously collect this data. SKM recommended that where these services are offered in future years, Allconnex should collect information within the above categories.

SKM were asked to compare the actual capital costs for the 2008/09 and 2009/10 financial years to the supporting documentation provided by Allconnex. SKM noted some differences in the capital expenditure values presented in supporting documentation and the data template for 2008/09. SKM noted that total capital expenditure for 2008/09 proposed by Allconnex was lower than that available in supporting information. SKM recommended that the 2008/09 values be subject to further review.

The Authority considers that Allconnex should provide further detailed information on capital expenditure for 2008/09 that can be verified against councils' audited financial accounts, as required under the Direction.

The Authority notes that 2009/10 capital expenditure cannot be verified against councils' financial accounts as supporting information based on 2009/10 audited accounts is yet to be provided by the entities. Allconnex subsequently indicated that it will provide the 2009/10 audited capital expenditure information to the Authority with is responses to the draft report, in early 2011.

Further, allowable establishment costs have not been advised by the Minister for Natural Resources, Mines and Energy and Minister for Trade.

The Authority will further review Allconnex's past capital expenditure once audited information is available and establishment costs once they have been finalised by the Minister. As a result, the initial RAB as at 1 July 2010 should be viewed as an interim RAB.

**The Authority will review past capital expenditure claimed by Allconnex once audited information is available and establishment costs have been approved by the Minister.**

*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 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.

Stakeholder submissions

The SEQ Water Grid Manager noted in its submission that the entities will be required to develop a drinking water quality management plan consistent with the SEQ water grid quality management plan developed by the SEQ Water Grid Manager.

In its submission, Allconnex proposed a capital works program of $1.3 billion over 3 years, of which water accounts for $340 million and wastewater accounts for $992 million (all figures are in nominal terms unless otherwise stated).

(a) Proposed Capital Expenditure

Allconnex assigned the increase in capital works to the following cost drivers: growth, renewal and compliance (Table 13). No projects were classified as improvements as the previous council classification did not use this driver.

**Table 13: Forecast Capital Expenditure Water and Wastewater ($m)**

| | *2010/11* | *2011/12* | *2012/13* | *Total* |
|---|---|---|---|---|
| Growth | 372.7 | 445.3 | 242.9 | 1060.7 |
| Renewal | 86.6 | 78.9 | 71.1 | 236.6 |
| Improvement | 0 | 0 | 0 | 0 |
| Compliance | 26.1 | 3.4 | 4.3 | 33.8 |
| **Total** | **485.4** | **527.5** | **318.3** | **1331.2** |
| **Comprising** | | | | |
| **Water** | **105.1** | **119.8** | **115.2** | **340.1** |
| **Wastewater** | **380.3** | **407.7** | **203.1** | **991.1** |

*Note Capital expenditure is presented on an incurred basis as per Allconnex's submission.*
*Source Allconnex (2010).*

The water and wastewater costs related to each of Allconnex's three geographic areas are detailed in Tables 14 and 15 below.

**Table 14: Capex for Water by Geographic Area ($m)**

| | *2010/11* | *2011/12* | *2012/13* | *Total* |
|---|---|---|---|---|
| Gold Coast | 62.1 | 58.7 | 63.5 | 184.3 |
| Logan | 36.6 | 52.6 | 44.9 | 134.2 |
| Redland | 6.3 | 8.5 | 6.7 | 21.6 |
| **Total** | **105.1** | **119.8** | **115.2** | **340.1** |

*Source Allconnex (2010) data template*

**Table 15: Capex for Wastewater by Geographic Area ($m)**

| | *2010/11* | *2011/12* | *2012/13* | *Total* |
|---|---|---|---|---|
| Gold Coast | 281.9 | 275.2 | 56.4 | 613.6 |
| Logan | 80.7 | 113.5 | 127.4 | 321.7 |
| Redland | 17.6 | 18.9 | 19.2 | 55.9 |
| **Total** | **380.3** | **407.7** | **203.1** | **991.1** |

*Source Allconnex (2010) data template*

(b) Service Standards

In its submission, Allconnex stated that it has two types of standards:

(a) customer service standards which include details of the services provided and the water, wastewater and recycled water services areas, details of response and repair completion times; and

(b) desired standards of service which provide standards that can impact on scale and timing of the capital program, including average day demands, demand distribution, peaking factors, pressure parameters, fire fighting parameters, reservoir storage, pump and pipeline design and water, wastewater, trade waste, biosolids, release and recycled water quality.

Allconnex noted that the planning projections currently assume no change to the pre-existing planning and customer service standards for each of the districts. Further, Allconnex stated that the service standards were reviewed for currency and applicability as part of the total management plan and strategic asset management plan review.

(c) Capital Planning

In its submission, Allconnex stated that the general process followed by the three districts to prepare and validate the capital budget comprised of a number of elements described below:

(a) development – the process used to identify projects, build, approve and review a program;

(b) justification – the process used to justify individual projects in terms of meeting corporate goals, identifying service levels, defining the timing of the project in terms of meeting demands, regulatory requirements, maintenance or expected failure;

(c) evaluation and analysis – the process used to define the scope, cost estimates, impacts on capital expenditure and operational expenditure budgets, options evaluation and consequence of failure to make the investment;

(d) procurement – assessment of procurement options;

(e) prioritisation – the process used to prioritise projects on an annual basis, taking into consideration the ability to deliver the program; and

(f) delivery – the process used to plan and deliver the program, including concept and detailed design, construction, asset acceptance and handover, monitoring and reporting on the program, process review, improvement and integration into further phases of planning or the business.

In subsequent information provided to the Authority, Allconnex confirmed that its original submission was premised on a consolidation of the three participating councils' (Gold Coast, Logan and Redlands) budgets for their respective water businesses for 2010/11.

Allconnex noted that it had had limited time to undertake a comprehensive review of all costs at the time of providing its submission to the Authority but has subsequently reviewed its total capital budget, applying the regulatory principles of prudent and efficient investment to the original submitted program.

Allconnex advised that this review has identified possible savings of capital investment in the first five years of its operation (to 2015-16) in the order of $500 million. For 2010/11

approximately $168 million in capital expenditure has been either removed or deferred. Allconnex identified that this represents a saving in 2010/11 of $16M in interest payments.

#### Authority's Analysis

The Authority engaged SKM and Halcrow to review the adequacy of data provided by Allconnex and the prudency and efficiency of the proposed capital expenditure within the framework outlined in the Authority's *Final Report SEQ Interim Price Monitoring Framework*. In accordance with this framework, SKM and Halcrow reviewed the cost drivers of the capital expenditure in detail and the scope and standard of the works when assessing the prudency and efficiency of capital works.

##### (a) Adequacy of Capital Expenditure Data

SKM commented that Allconnex Water has identified capital expenditure in the year expenditure is incurred rather than the year of commissioning. The Authority noted in its *SEQ Interim Price Monitoring Framework (April 2010)* that capital expenditure should be capitalised (and hence included in the RAB) when the asset for which the capital expenditure occurred is able to contribute to the productive capacity of the system.

SKM recommended that for future returns Allconnex only include capital expenditure when the asset (or relevant portion of the asset) has been commissioned. In doing so, project lists should be provided that link the underlying cost components such as unit rates, on-costs and contingencies and any other supporting materials such as consultant reports.

In absence of anticipated commissioning dates for each of Allconnex Water's 352 projects, SKM was unable to make these changes to the data templates.

SKM noted that Allconnex allocated capital expenditure to only three of the seven categories (drinking water, wastewater via sewer and trade waste). SKM also noted that costs associated with recycled water are included within the "wastewater via sewer" category. SKM recommended recycled water costs be separated out (despite the difficulties in doing so) as Allconnex has a substantial recycled water network and there may be an alternative pricing strategy for the provision of recycled water in the future. The Authority notes SKM's comment, and acknowledges that pricing principles are yet to be developed and that disaggregated information on costs will inform this process.

As Allconnex only provided disaggregated costs for three of the seven categories, the Authority notes that it is not possible to develop a MAR at the more disaggregated level originally intended. For the purposes of this review, the Authority has therefore maintained the same level of disaggregation for Allconnex as for the other entitites.

With regards to indexation, Allconnex stated that construction costs have continued to rise faster than CPI and Allconnex have therefore used an ABS construction indexation rate from March 1999 to March 2010 of 5% per annum.

The Authority acknowledges that there are a number of options for indexation of asset values effectively and they range from range from a broad-based inflation index such as CPI to a specific industry input index or combination of input indices.

Industry input indices should provide a more accurate estimate of replacement cost-based asset values and could provide a reasonable substitute for a full revaluation. However, such indexes may be subject to significant step changes, and would be expected to rise and fall in line with market conditions. This could lead to significant price variations within and between regulatory periods.

In a previous review of infrastructure charges for the Authority, Access Economics (AE) noted that escalation rates for construction costs should be based on long-run trends, rather than short run averages that deviate significantly due to idiosyncratic economic conditions. Based on long-run trends, AE recommended escalating the cost of construction by 4% per annum.

Based on the above, the Authority considers that Allconnex proposed indexation rate of 5% per annum is reasonable for the first price monitoring review although the Authority notes that a consistent indexation rate across SEQ will be investigated over the interim price monitoring period, taking into account further research and actual outcomes. The Authority notes that any variations between Allconnex's forecast and actual capital expenditure will be taken into account at the next price monitoring review.

(b) Service Standards

The Authority is not reviewing service standards as part of this price monitoring review. The Authority has accepted the service standards provided by the entities as long as they have been approved by other agencies.

SKM confirmed that there is variation in service standards across Allconnex's operational area, with each geographic area having its own documented service standards. SKM noted that this is expected to continue until the release of a water and wastewater code which will provide minimum guaranteed service standards for the customers of the three entities, under the *South East Queensland Water (Distribution and Retail Restructuring) Act 2009*.

Further, SKM noted that Allconnex is conducting a review of the standards of each district to ensure that there is consistency across the business. Where service standards are the driver for increased capital expenditure, SKM has reviewed this against the documentation provided by Allconnex to assess the prudency and efficiency of the works.

(c) Capital Planning

Allconnex's demand forecasts for pricing and operating costs and those for capital planning are done separately. While both look at historical trends and project forward official growth forecasts and anticipated water use trends, there are considerable differences in some cases. In assessing the prudency of the sampled projects, the consultant assessed each project individually against planning documents. In other words, the consultant accepted the demand forecasts used. This is not unreasonable on this occasion.

SKM noted that Allconnex currently has different processes for capital planning for the different geographical areas. However, each district within Allconnex had produced either a PIP or Planning Scheme Policies (PSPs), which had been adopted by Allconnex. SKM noted that these documents define the scale, type, timing and location of the growth in the city in order to plan future water supply and wastewater trunk infrastructure and to determine the charges required to fund it. SKM noted that these documents have been used develop the growth component of Allconnex's capital works program.

Under transitional arrangements, the *South East Queensland Water (Distribution and Retail Restructuring) Act 2009* transfers SAMPs, SLMPs and existing drinking water plans developed by shareholder councils to Allconnex until such time as Allconnex develops an approved drinking water plan (due to 1 July 2011) and an endorsed Water Netserv Plan (due by 1 July 2013). The Water Netserv Plan must have regard to planning documents included in the South East Queensland Regional Plan 2009-2031 and the planning assumptions made by shareholding councils for Allconnex' operating area.

SKM noted that Allconnex is in the process of developing a Netserv Plan as required by the South-East *Queensland Water (Distribution and Retail Restructuring) Act 2009*. SKM

commented that the development of a NetServ Plan provided a good opportunity for Allconnex to develop a consistent and structured approach to planning for all districts.

Due to time constraints, SKM focussed its review on the policies and procedures of the Gold Coast district. SKM considered that the Gold Coast district's processes and procedures represent many aspects of good industry practice. SKM stated that Allconnex has a system in place for selecting capital expenditure projects based on the three main cost drivers of growth, renewals and compliance.

SKM noted that for the larger projects associated with Gold Coast a number of planning reports and master plans had been undertaken, which appear to be consistent with Gold Coast district's procedures. For the smaller project reviewed, however, SKM noted that the planning did not follow the prescribed outline or include financial analysis.

In order to demonstrate the prudency and efficiency of capital expenditure projects, SKM recommend that Allconnex provide a capital expenditure project list including the following items:

(a) a unique identifier for each project (i.e. project number or similar) and a brief project description;

(b) asset category (drinking water, wastewater via sewer etc) and geographic area (Gold Coast, Logan, etc or future boundaries);

(c) relevant cost driver (and percentage allocation, if split between multiple drivers);

(d) current project status (initiation, preliminary design, detailed design);

(e) links to existing reports, including project initiation forms, business cases; and

(f) links to relevant standards of service.

The Authority also notes that an overall process be developed for selecting and prioritising projects from each of the three districts be adopted, and this process should include:

(a) 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;

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

(c) an implementation strategy to be developed for each major project to assist in ensuring the deliverability of the project in the proposed timeframe;

(d) establishment of a benchmark for determining the prudency of a project based on design flows and projected growth;

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

(f) a process for considering synergies between the districts. Where relevant, master planning studies, feasibilities studies and network models should take into consideration opportunities and risks in neighbouring areas, to allow the development of an integrated and optimised network.

The Authority agrees with SKM's findings and recommendations with regard to the policies and procedures followed by Allconnex. In particular, the Authority encourages that Allconnex develop a detailed project list and processes which take into account a regional perspective which developing future capital works programs.

(d) Prudency and Efficiency

For capital expenditure to be included in the RAB, expenditure 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).

The Authority notes that, after applying a prudency and efficiency test, Allconnex has recently identified savings of capital investment in the first five years of its operation (to 2015/16) in the order of $500 million. For 2010/11 approximately $168 million in capital expenditure has been either removed or deferred.

The Authority supports ongoing review by Allconnex of its capital expenditure program and has included the identified savings in its review of capital expenditure. The Authority has not yet been provided with details of the nature of these savings.

In assessing the cost efficiency of the sampled projects, SKM used published unit rates from Rawlinsons, available unit rates from SEQ water entities and also other water utilities, previous project experience on similar projects and quotes from various suppliers. Some of these unit rates are confidential and are therefore not published in this report. Unit rates identified or calculated from the supporting data were compared to a range of rates from the above sources. If the rate was within 30% of the benchmark identified for a similar type, length and diameter or pipe, or similar type of project, SKM considered the expenditure to be cost efficient.

SKM noted that there are a number of factors that can significantly affect the cost of the projects including the project location (e.g. highly urbanised areas are significantly more expensive than greenfield sites), material types (e.g. different pipeline materials such as PVC and MICL pipe), the fittings and fixtures required (e.g. many connections and valves versus only a few), and geotechnical conditions (e.g. rock versus sandy soils).

Having regard to the above sources of variation, and the time available for review, SKM considered that variation above 30% required further detailed evaluation. The Authority notes that contingency allowances can vary from 5 to 40% depending on the stage of a project's planning (Evans and Peck, 2009).

The Authority accepts SKM's approach for this first review but notes that it will be seeking to refine this range over the interim period wherever possible. The Authority also notes that, in previous reviews of infrastructure charges, 25% was recommended to the Authority by another consultant.

The sample chosen for a review of prudency and efficiency includes the projects which account for at least ten per cent of the overall capital project spend and an additional medium value project for each of the geographic area. For Allconnex this resulted in a sample of 13 projects which accounted for 28% of all the capital expenditure in 2010/11 and 33% capital expenditure between 2011/12 and 2012/13. A range of projects across councils by size and over the interim period was chosen to test the application of policies and procedures across a variety of projects.

The Authority did not limit its sample to expenditure to be incurred in 2010/11 in order to signal its view of the prudency and efficiency of projects currently underway and due to be commissioned in later years.

In addition to the sample, the Authority accepted that findings of a Cardno report, provided by Allconnex, on the prudency of its proposed capital expenditure for the Logan area. The Cardno review applied the Authority's test of prudency, and found four Logan projects could not be confirmed as being prudent. These projects are included in the analysis below. The complete list of capital expenditure programs reviewed is shown in Table 16 (with capital expenditure shown as incurred).

**Table 16: Capital expenditure programs reviewed ($m)**

| *Project* | *Activity* | *2010/2011* | *2010/11-2012/13* |
|---|---|---|---|
| Merrimac West WW Stage 2 | Wastewater | 78.7 | 238.6 |
| Stapylton WWTP Stage 1 | Wastewater | 31.5 | 53.3 |
| Southern Relief Sewer Stage 1 | Wastewater | 5.2 | 27.6 |
| Chetwynd St Upgrade | Wastewater | 2.1 | 22.0 |
| Potable Water Network | Water | 4.7 | 19.7 |
| Logan North – External Sewer Upgrade | Wastewater | 8.1 | 16.8 |
| Point Lookout WWTP | Wastewater | 5.6 | 12.2 |
| Springwood Master Plan Area Trunk Mains | Water | 0 | 11.3 |
| Lower Logan Effluent Reuse | Wastewater | 0 | 11.3 |
| Provisions for AC Reticulation Main Replacements | Water | 1.8 | 8.0 |
| Retic- Backlog fire flow augmentation | Water | 2.5 | 7.2 |
| Park Ridge MPA | Wastewater | 0 | 5.7 |
| Cleveland WWTP | Wastewater | 0 | 4.8 |
| Gravity & Rising | Wastewater | 1.0 | 1.0 |
| Treatment Plant Future Misc Items Estimates | Wastewater | .1 | .6 |
| Pump Station Number 61 | Wastewater | .05 | .2 |

*Source Allconnex supporting information. Capital expenditure shown in nominal dollars as incurred.*

SKM, Halcrow and Cardno found that most, but not all, of Allconnex's forecast programs were prudent and efficient in 2010/11. For much of the expenditure in 2011/12 and 2012/13, insufficient data (and the early stage of planning) meant that the consultants were unable to come to a conclusion on prudency and efficiency. The consultants' conclusions and the Authority's response with respect to the prudency and efficiency of the proposed capital expenditure programs is detailed below on a project by project basis.

(i) Merrimac West Stage 2

The Merrimac West Stage 2 Wastewater Network Augmentation project is proposed to upgrade the current wastewater infrastructure within the Merrimac West catchment to accommodate the proposed level of future growth. Many components throughout the system are reaching the end of their useful asset life including mechanical equipment in major pump stations.

The capital expenditure is proposed to be $240 million over the 2010/11-2012/13 period (see Table 17).

**Table 17: Merrimac West Stage 2 Capital Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Merrimac West | 78.8 | 159.3 | 0.5 | 238.6 |

*Source SKM (2010)*

With regards to prudency, SKM noted that given the region's projected population growth, work involving the upgrading of existing infrastructure is required. SKM considered that as a number of elements of the existing system are currently at capacity, sufficient information has also been provided to support an immediate start to work.

SKM noted that a number of documents were provided that imply that this project has been well considered. These documents include a Master Plan, initially produced in 2004 and updated in 2008 and the PIP of Merrimac Catchment produced by Gold Coast Water.

With regards to efficiency, SKM noted that the project costs appear to be not unreasonable. SKM stated that a number of options have been considered and reviewed during the development of the scope, including the production of an independent cost assessment. SKM concluded that based on a review of the rates and itemised costs of items and works such as gravity sewers, rising mains and the new regional pump station to be delivered, the costs appear to be efficient.

SKM stated that the Target Outturn Cost has yet to be agreed by the Allconnex Board and that the future delivery mechanism of this project is also uncertain, which has a related impact on the quantum and timing of expenditure.

Based on the above, SKM concluded that the capital expenditure for this program of works for 2010/11 appears prudent and efficient. However, the expenditure in years 2011/12 and 2012/13 requires further review.

With regards to deliverability, SKM noted that while construction was scheduled to begin before the end of the year, the project is already behind schedule. SKM stated that the impact of this delay on the budget cannot be determined and recommended that the budget for future years account for any carryover of capital works.

The Authority accepts SKM's findings that the capital expenditure for 2010/11 is prudent and efficient and that the capital expenditure for future years should be further reviewed. It is not proposed to remove the 2011/12 and 2012/13 expenditure from the RAB at this stage. The Authority notes that the cost of this project is subject to further review by the Allconnex Board, which may result in further efficiencies.

(ii) Stapylton WWTP Stage 1

This project involves the construction of a new wastewater treatment plant to service growth in the area south of Beenleigh and north of Ormeau. Halcrow noted that the ultimate capacity of the plant is planned to be 37,600ET, with Stage 1 to provide an initial capacity of 13,800ET.

Halcrow further noted that, it is expected that up to 50 percent of wastewater received at the plant will originate from industrial developments. Consequently the plant will incorporate the latest treatment technologies including biological nutrient removal and disinfection processes.

The capital expenditure is proposed to be $53.3 million over 2010/11-2012/13 (see Table 18).

**Table 18: Stapylton WWTP Stage 1 Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Stapylton | 31.5 | 21.5 | 0.3 | 53.3 |

*Source Halcrow (2010)*

With regards to prudency, Halcrow noted that the proposed plant is included as an item of proposed trunk infrastructure in the current PIP for the former Gold Coast City Council area. Halcrow stated that, Allconnex confirmed that the population growth figures on which the PIP was based have been verified by the PIFU. Halcrow considered that on the basis of the planning documentation reviewed, the construction of the Stapylton WWTP was prudent as it is required to service predicted growth in the catchment.

With regards to efficiency, Halcrow considered that the proposed Stapylton WWTP had been the subject of an extensive and robust planning process over a number of years. Halcrow further noted that the estimates presented have been derived using unit rates compiled by an independent consultant and the costs have been determined by estimating the costs of the principal construction activities and/or components of infrastructure. Halcrow stated that the application of a 30 percent contingency allowance at this stage of the planning process is consistent with water industry practice.

Halcrow noted that Allconex subsequently advised that the estimated cost of the Stapylton WWTP Stage 1 works, which is included as part of the Target Outturn Cost (TOC) determined under the Alliance arrangement is $58.1 million ($57.8 million and carry over expenditure of $264,000) (see Table 19).

**Table 19: Stapylton WWTP Stage 1 Revised Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Stapylton | 34.1 | 23.3 | 0.3 | 57.8 |

*Source Halcrow (2010)*
*Note – Carry over expenditure of $264,000 forecast for 2013-14*

Halcrow noted that the increase in cost has been identified through the greater detail involved in the TOC development process, which also involves independent verification of the costs. Halcrow considered that the revised cost estimate amounts to approximately $4,190 per EP (previously $3,900 per EP), which is generally consistent with the estimated and actual costs of other similar works. While Halcrow noted that Allconnex was conducting further investigations that may affect the actual cost and cash flows, Halcrow also noted that the use of a properly managed Alliance delivery mechanism should ensure that the revised cost estimate of $58.1 million is efficient.

The Authority accepts Halcrow's findings that the capital expenditure is prudent and efficient and forecasts need to be increased to reflect more recent information provided by Allconnex. The Authority notes that this finding has resulted in an increase of $2.6 million in expenditure in 2010/11 compared to that originally submitted by Allconnex. Nonetheless, the Authority supports the ongoing investigations by Allconnex and the pursuit of efficiencies in this project.

(iii) Chetwynd St Upgrade, Southern Relief Sewer Stage 1, the Slacks Creek Project and the Slacks Creek Trunk Sewer Extension – RM Stage 1

Allconnex advised that the proposed Chetwynd St Upgrade and Southern Relief Sewer Stage 1 had been replaced by the Slacks Creek Trunk sewer extension and Slacks Creek Trunk sewer extension rising main.

SKM reviewed the Slacks Creek Trunk Sewer Rising Main.

The capital expenditure is proposed to be $34.4 million over 2010/11-2012/13. The original and revised expenditure profiles are contained in Tables 20, 21, 22 and 23 below.

**Table 20: Chetwynd St Upgrade Capital Expenditure profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Chetwynd | 2.1 | 16.5 | 9.2 | 27.9 |

*Source SKM (2010)*

**Table 21: Southern Relief Sewer Stage 1 Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Southern Relief | 5.2 | 16.5 | 5.8 | 27.5 |

*Source SKM (2010)*

**Table 22: Slacks Creek Trunk sewer extension Trunk Main (gravity) ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Slacks Creek Trunk Main | 2.1 | 20.9 | 1.1 | 24.1 |

*Source Allconnex (2010)*

**Table 23: Slacks Creek Trunk sewer extension rising main ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Slacks Creek rising main | 2.1 | 24.2 | 8.1 | 34.4 |

*Source Allconnex (2010)*

This project involves the provision of a new wastewater rising between Loganlea and Loganholme Water Pollution Control Centre (LWPCC).

With regards to prudency, SKM considered the project to be prudent with respect to demonstrated need based on the information provided. SKM noted the benefits of this project proceeding as:

(a) ensuring compliance with legislation, e.g. environmental drivers;

(b) significant reduction to the incidence of wastewater overflow events;

(c) providing wastewater conveyance capacity ahead of growth; and

(d) reduction in operational costs for conveyance of wastewater between Slacks Creek and LWPCC.

With regards to efficiency, SKM considered that this project appears to meet the desired outcomes addressing the growth of the area. However, based the broad scope and past experience, SKM considered that the costs appear to be higher than expected and may be delivered more efficiently. SKM noted that information was not available to assess the reasons for higher than normal commercial levels. SKM also noted that the works were being completed as part of the Logan Water Alliance.

With regards to deliverability, SKM noted that the construction of works is currently behind schedule.

SKM concluded that the capital expenditure for this program of works for the three years commencing 2010/11 is considered to be prudent (resulting in an increase of $3.1 million to that originally submitted), although the costs reviewed to date are considered to be slightly high and may be delivered more efficiently. SKM recommended that expenditure for 2011/12 and 2012/13 should be further reviewed before approval.

The Authority accepts SKM's findings with regards to this project.

(iv) Potable Water Network – developed areas

The potable water network project is designed to service the existing development areas of Tooraneedin, Jacobs Well and Steiglitz. It involves the construction of two pump stations, two reservoirs and two re-chlorination plants.

The capital expenditure is proposed to be $20 million over 2010/11-2012/13 (see Table 24).

**Table 24: Potable Network - Developed Areas Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Potable Network | 4.7 | 9.8 | 5.2 | 19.7 |

*Source SKM (2010)*

With regards to prudency, SKM considered the project to be prudent with respect to demonstrated need based on the information provided. SKM noted that reports provided identified that construction of these assets will meet the desired standards of service for potable water supply to the predicted growth in the Tooraneedin, Jacobs Well and Steiglitz areas.

With regards to efficiency, SKM considered that the project costs appear to be reasonable. SKM noted that the potable water network in these developed areas appears to be of the right order of magnitude for the lengths, diameters and additional infrastructure to be provided in this project. SKM stated that based on a comparison of the average unit rates used with a range of unit rates from similar water utilities, the rates are within 30% and are considered to be reasonable.

SKM concluded that the capital expenditure for this program of works for the three years commencing 2010/11 is considered to be prudent and efficient.

However, SKM noted that there is insufficient information to make a judgement on the deliverability and timing of this project.

The Authority accepts SKM findings that the capital expenditure is prudent and efficient.

(v) Logan North – External Sewer Upgrade for 2011 for Park Ridge MDA

The Park Ridge MDA is an infill development that is being developed and which requires connection to the Logan North Sewer Area.

The capital expenditure is proposed to be $17 million over 2010/11-2011/12 (see Table 25).

**Table 25: Logan North – External Sewer Upgrade Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Logan North | 8.1 | 8.7 | - | 16.8 |

*Source Allconnex (2010)*

With regards to prudency, Cardno noted that the growth assumptions used to commence the woks have not been verified against actual flow data, scenarios of lower water use and possible changes to demand in Park Ridge following the change of focus to the growth points at Yarrabilba and Greater Glagstone.

Cardno stated that it could not conclude that the expenditure is prudent given that the population profile on which it is based may be overstated.

The Authority accepts Cardno's findings regarding prudency as such no further review of the efficiency of the capital expenditure was undertaken and the capital expenditure removed from Allconnex's forecasts.

(vi) Point Lookout WWTP

The Point Lookout Sewerage development creates the need for upgrades to the Point Lookout WWTP to service the emerging growth of the township. The capacity of the plant is to be upgraded from approximately 860EP to around 6,000EP.

The capital expenditure is proposed to be $12 million 2010/11-2012/13 (see Table 26).

**Table 26: Point Lookout WWTP Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Point Lookout | 5.6 | 6.3 | 0.2 | 12.2 |

*Source SKM (2010)*

With regards to prudency, SKM stated that this project to prudent with respect to demonstrated need based on the information provided. SKM noted that this project is supported by robust documentation, including:

(a) planning report – options assessment, justification, recommendation and further development;

(b) cost estimates – Capital expenditure and Operational expenditure budgets;

(c) board report, draft business; and

(d) works program.

With regards to efficiency, SKM considered that the project costs to be reasonable. SKM noted that an Independent Estimator (Project Support) and an Alliance Financial Auditor (KPMG) provided external scrutiny of the process and reviewed costing information. Further, SKM stated that compared to previous projects, the build-up of costs appeared to be robust.

SKM recommended that capital expenditure for this program of works is prudent and efficient.

The Authority accepts SKM's findings that the capital expenditure is prudent and efficient.

(vii) Springwood Master Plan

This project is derived from the planning report for Springwood and relates to general water infrastructure in the Springwood area.

The capital expenditure is proposed to be $11 million 2010/11-2012/13 (see Table 27).

**Table 27: Springwood Master Plan Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Springwood master Plan | - | 5.5 | 5.7 | 11.3 |

*Source Allconnex (2010)*

With regards to prudency, Cardno noted that no conclusion could be made regarding prudency given the absence of detailed planning and the uncertainty over timing. Cardno stated that the expenditure had been translated from a high level planning document and there is no evidence of any further work being completed to confirm this timing.

The Authority accepts Cardno's findings regarding prudency as such no further review of the efficiency of the capital expenditure was undertaken and the capital expenditure removed from Allconnex's forecasts.

(viii) Lower Logan Effluent Reuse

The expenditure for this project is for pre-planning and land acquisitions relating to providing wastewater treatment and effluent reuse to the Lower Logan area which includes the Yarrabilba and Greater Flagstone development areas.

The capital expenditure is proposed to be $11 million over 2011/12-2012/13 (see Table 28).

**Table 28: Lower Logan Effluent Resuse Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Lower Logan Effluent Reuse | - | 5.5 | 5.8 | 11.3 |

*Source Allconnex (2010)*

With regards to prudency, Cardno noted that there was a clear need for infrastructure to handle wastewater from population growth in the Lower Logan area and this need had been exacerbated by the fast tracking of the Yarrabilba and Greater Flagstone schemes. However, Cardno stated that there was not sufficient evidence to justify the proposed timing of the

expenditure, or that the effluent reuse strategy is still valid given the changed timing of the development. Cardno was therefore unable to conclude that this project is prudent.

The Authority accepts Cardno's findings regarding prudency as such no further review of the efficiency of the capital expenditure was undertaken and the capital expenditure removed from Allconnex's forecasts.

(ix) Provision for AC Reticulation Main Replacement

The AC reticulation main replacement project is to replace existing water supply reticulation in the Logan District. The 2010/11 scope of the project includes:

(a) supply and installation of about 8.3 kilometres of new pipelines, including valves and hydrants over 25 different locations;

(b) reconnection of existing water service connection to the new main; and

(c) decommissioning of existing section of pipeline to be replaced.

The capital expenditure is proposed to be $8 million over 2010/11-2012/13 (see Table 29).

**Table 29: AC Reticulation Main Replacement Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| AC Reticulation Main Replacement | 1.7 | 3.2 | 3.2 | 8.1 |

*Source SKM (2010)*

With regards to prudency, SKM considered this project to be prudent with respect to demonstrated need based on the information provided. SKM noted that business benefits of this project include:

(a) reduced number of water main breaks and associated duration of water supply interruptions in Logan District;

(b) minimise system losses;

(c) reduce customer complaints; and

(d) maintain customer service standards.

SKM also noted that the report 'Review of Prudence of Capital Expenditure' September 2010 by Cardno found this project to be prudent.

With regards to efficiency, SKM noted that this project not only proposes to replace mains that currently do not meet the Desired Standards of Service, but also those that have had a number of failures in the past few years. Further, SKM considered that the project costs appear to be not unreasonable for the 2010/11 financial year based on the scope provided. SKM stated that these costs appear on the lower side of what might be expected (less than 30% of some unit rates). However, SKM considered that information of the scope for the subsequent financial years is not available and hence no assessment can be made regarding its reasonableness.

Based on the above, SKM recommended that the capital expenditure for 2010/11 is prudent and efficient. However, SKM stated that, due to lack of information no assessment can be made

regarding the prudency and efficiency of capital expenditure in 2011/12 and 2012/13. SKM recommended that expenditure for 2011/12 and 2012/13 should be further reviewed before approval.

The Authority accepts SKM's recommendation that the project is prudent and efficient in 2010/11 and that it is taken into account for price monitoring purposes. The Authority also accepts SKM's recommendation that while the costs of future years should be further reviewed, the capital expenditure profile not be adjusted at this stage.

(x) Reticulation – Backlog fire flow augmentation

This project involves replacing large amounts of pipe infrastructure to meet the fire flow demands. SKM noted that in undertaking detailed network modelling for the Pressure & Leakage Management Project, it was discovered that significant areas of the water supply network are unable to provide fire flows in accordance with the current Planning Guidelines for Water Supply & Sewerage.

The capital expenditure is proposed to be approximately $7 million over 2010/11-2012/13 (see Table 30).

**Table 30: Reticulation – Backlog fire flow augmentation Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Reticulation fire flow augmentation | 2.5 | 4.6 | - | 7.1 |

*Source SKM (2010)*

With regards to prudency, SKM considered this project to be prudent with respect to demonstrated need based on the information provided. SKM noted that improvement of the water supply network's ability to provide fire flows in accordance with the Planning Guidelines for Water Supply & Sewerage.

With regards to efficiency, SKM stated that based on a comparison of the average unit rates, with a range of unit rates from similar water utilities, the rates are within 30% and are considered to be reasonable.

Based on the information provided, SKM recommended that the capital expenditure is prudent and efficient.

The Authority accepts SKM finding that this project is prudent and efficient.

(xi) Park Ridge MPA – Two Elevated Reservoirs

These reservoirs are designated to supply the Park Ridge growth area.

The capital expenditure is proposed to be $6.7 million over 2011/12-2012/13 (see Table 31).

**Table 31: Park Ridge MPA Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Park Ridge | | 3.3 | 3.4 | 6.7 |

*Source Allconnex (2010)*

With regards to prudency, Cardno stated that Logan advised that this project has been brought forward from 2021 due to uncertainty around the bulk water supply connection point to be provided by LinkWater. Cardno noted that the planning report for this project which stated the need for this was work in 2021 was completed in April 2010. However, Cardno stated that there had been no formal document that outlined why this project needed to be bought forward by 10 years.

Cardno considered that while the delay to the LinkWater connection required planning to be reconsidered, an options analysis should be completed and documented before this expenditure can be considered prudent.

The Authority accepts Cardno's findings regarding prudency as such no further review of the efficiency of the capital expenditure was undertaken and the capital expenditure removed from Allconnex's forecasts

(xii) Cleveland WWTP

The Cleveland WWTP is an upgrade of the existing treatment plant including the renewal of the access road, new filters for recycled water, repair of inlet screens, upgrade of odour control, and by 2016 provision of a balancing tank and chlorine contact tank.

The capital expenditure is proposed to be $4.8 million over 2011/12-2012/13 (see Table 32).

**Table 32: Cleveland WWTP Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Cleveland WWTP | - | 0.2 | 4.6 | 4.8 |

*Source SKM (2010)*

With regards to prudency, SKM considered that this project appears to be generally prudent with respect to demonstrated need based on the information provided. SKM stated that there appeared to be significant growth experienced in the catchment, and this was expected to continue. SKM noted that population growth projections in the Cleveland catchment from current population estimates (33,000 EP in 2009) until 2025 (47,000EP) are significant at 45%.

With regards to efficiency, SKM considered that the project costs appear to be not unreasonable. SKM stated that while the estimates generated to date appeared to demonstrate cost efficiency, there were some concerns about different unit rates for work at the same site. However, SKM noted that the overall the approach adopted appeared to be efficient.

The Authority accepts SKM finding that this project is prudent.

(xiii) Guineas CK RD Gravity and Rising Main Augmentation

The Guineas CK Rd Gravity & Rising Main Augmentation project involves the construction of a new water main, condition assessment of existing mains and construction and upgrade of wet wells and pumps.

The capital expenditure is proposed to be $1 million in 2010/11 (see Table 33).

**Table 33: Guineas CK Rd Gravity and Rising Main Augmentation Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Guineas CK | 1.0 | - | - | 1.0 |

*Source SKM (2010)*

With regards to prudency, SKM considered that this project appears to be prudent with respect to demonstrated need based on the information provided. SKM noted that the augmentation of this infrastructure was required due to increased population growth in the catchment area and the current infrastructure not meeting the flow requirements.

With regards to efficiency, SKM considered that the project costs appear to be not unreasonable and the estimates are within a reasonable range of benchmarks identified by SKM.

SKM stated that based on the information provided, the capital expenditure for this program of works is considered to be prudent and efficient.

The Authority accepts SKM's finding that this project is prudent and efficient and be taken into account for price monitoring purposes.

(xiv) Treatment Plant Future Misc Capital items

This project involves miscellaneous items to be included in the capital expenditure budget for Allconnex Water. It includes the renewal of both the roof and inlet building façade of the Logan Water Pollution Control Centre (LWPCC), as it has been identified as a serious workplace health and safety issue.

The capital expenditure is proposed to be $0.6 million over 2010/11-2012/13 (see Table 34).

**Table 34: Treatment Plant Future Misc Capital Items Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Misc Items | 0.1 | 0.2 | 0.3 | 0.6 |

*Source SKM (2010)*

With regards to prudency, SKM considered that this project appears to be prudent with respect to demonstrated need based on the information provided. SKM stated that it is necessary to renew the LWPCC Inlet Building Façade and Roof Repairs as it has been identified as a serious workplace health and safety issue. SKM noted that this is evidenced by the photos enclosed with the supporting document, which showed loose bricks at the top part of the façade and a vertical crack over the southern wall. As a temporary solution the southern wall has been cordoned off, however this is now impinging operation of the plant as some equipment cannot be maintained.

With regards to efficiency, SKM noted the planning report provided information on the roof and façade, but only the costing information for the roof was provided. SKM considered that insufficient information was provided to confirm what proportion of miscellaneous capital expenditure is these two items.

Based on the above, SKM considered the project to be prudent. However, SKM noted that further information (eg detailed report, delivery method, board report, works program) was required in order to confirm this.

Based on the above, SKM considered the project to be efficient. However, SKM recommended that clarification be provided on the difference between the cost indicated within the Allconnex capital expenditure list ($600k to 2012/13) and the Capital expenditure for the façade building and roof repairs ($150k).

The Authority accepts SKM's findings with regards to this project.

(xv) Pump Station No. 61

Pump station No. 61 has been identified as not currently meeting the performance requirements and it has therefore been proposed to upgrade this pump station with new pumps.

The capital expenditure is proposed to be $0.25 million over 2010/11-2012/13 (see Table 35).

**Table 35: Pump Station No. 61 Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Pump Station No. 61 | 0.05 | 0.17 | - | 0.2 |

*Source SKM (2010)*

While SKM considered the project to be prudent, SKM noted that there was insufficient information on the following aspects:

(a) planning report – evidence on upgrade works required for PS No. 61, or options assessment, justification, recommendation and further development of the upgrade works required for PS No. 61;

(b) cost estimates – capital expenditure and operational expenditure budgets; and

(c) delivery method considered within the planning report (2005) – but further supporting information is recommended to provide confirmation on the selected delivery method (to-date).

SKM also noted that a planning report provided was for the overall sewerage system rather than specifically on Pump Station 61. SKM recommended that Allconnex develop and apply a more rigorous assessment and documentation processes for this type of project.

With regards to efficiency, SKM noted that the project costs for 2010/11 appears to be not unreasonable. However, as design investigation is yet to be completed, SKM noted that it was difficult to confirm the efficiency for 2011/12.

The Authority accepts SKM's findings that the capital expenditure for 2010/11 is prudent and efficient and that the capital expenditure for 2011/12 should be further reviewed. It is not proposed to remove the 2011/12 expenditure from the RAB at this stage. The Authority notes that such projects are likely to be reviewed as part of 2011/12 price monitoring review. At this

time it is expected that the entities would have more substantial information available to determine prudency and efficiency.

Summary

The Authority notes that after an internal review of the efficiency and prudency of capital expenditure, Allconnex has subsequently identified savings in the first five years of its operation in the order of $500 million to the program originally proposed by councils and included in its submission to the Authority. For 2010/11, around $168 million in capital expenditure has been either removed or deferred.

The Authority has therefore added these savings to those identified by SKM. The Authority has prorated the $500 million over five years to result in savings of $300 million over the three year interim period. With a saving of $168 million in 2010/11, this results in savings of $66 million per annum over 2011/12 and 2012/13.

Based on its own analysis of sampled projects, the Authority notes that of the 16 projects reviewed for Allconnex, the majority were found to be prudent and efficient for 2010/11. Some were subject to ongoing internal review by Allconnex. For 2010/11, an adjustment relates to Logan North – External Sewer Upgrade ($8.1 million) which was found not to be prudent based on Cardno's assessment. Further for 2010/11 there were adjustments made to Stapylton WWTP (resulting in an increase of $2.6 million in expenditure in 2010/11) and Slacks Creek (an increase of $3.1 million) based on more recent information from Allconnex. The net effect is a reduction of $2.4 million in the sampled capital expenditure for 2010/11.

For much of the expenditure in 2011/12 and 2012/13, insufficient data (and the early stage of planning) meant that the consultants were unable to come to a conclusion on prudency and efficiency. Other projects were found to require some adjustment. These included Merrimac West Stage 2, Slacks Creek, Logan North, Springwood Master Plan, Lower Logan Effluent reuse, AC Reticulation Main Replacement, Park Ridge MPA, Treatment Plant Future Misc Items and Pump Station Number 61. Again, some of these adjustments arose from more recent information provided by Allconnex in response to the Authority's investigation and review.

The Authority proposes to subject these projects and programs to ongoing review as part of its 2011/12 price monitoring review. If as part of future reviews, the information to justify the projects is not available (despite the stage of planning), the Authority will remove these costs from the capital expenditure forecasts. The Authority expects that entities would be developing their process and systems to ensure that the prudency and efficiency of all projects can be optimally demonstrated over time. The Authority's 2011/12 price monitoring review will involve a review of actual capital expenditure in 2010/11, and the reasons for variations with original forecasts will be explored.

Based on SKM's findings, the Authority considers that the level of information provided for this review is broadly in line with the context of the newly formed entity, whereby Allconnex is undertaking a process of aligning the policies and procedures across three geographic areas.

The Authority supports Allconnex's initiative of commissioning an independent review of the prudency of capital expenditure projects in the Logan area.

The Authority considers that:

(a) Allconnex should only include capital expenditure in the data template when the asset (or relevant portion of the asset) has been commissioned;

(b) a standardised approach to cost estimating be developed, 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;

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

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

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

In addition, the Authority considers that Allconnex develop a process for considering prudency and efficiency from a regional perspective. The Authority would expect further efficiencies in capital expenditure may be found by Allconnex over the interim period.

**Table 36: Comparison between Allconnex and Authority's capital expenditure**

| | ***2010/11*** | ***2011/12*** | ***2012/2013*** | ***Total*** |
|---|---|---|---|---|
| Allconnex | 485.4 | 527.5 | 318.3 | 1331.2 |
| Efficiency gains | -168.0 | -66.0 | -66.0 | -300.0 |
| QCA adjustments | -2.5 | -33.3 | -9.1 | -44.8 |
| **Revised Total** | **314.9** | **428.2** | **243.2** | **986.3** |

*Note Efficiency gains derived from subsequent information from Allconnex and have been apportioned over the interim period. Source Allconnex (2010) and QCA calculations*

**In respect of data adequacy, the Authority notes that Allconnex should provide capital expenditure on a commissioned basis in future. Further, Allconnex only provided disaggregated costs for three of the seven service categories, as such it is not possible to develop a MAR at a more disaggregated service level than water and wastewater.**

**The Authority notes that currently Allconnex has a number of varying standards of service for customers and asset design as is expected of a newly formed entity. Work should be progressed to consolidate standards across the region.**

**The Authority considers that Allconnex should develop processes which take into account a regional perspective when developing future capital works programs.**

**The Authority notes that of the proposed $1.3 billion capital expenditure, Allconnex has identified significant savings over the interim period, following internal review. The Authority supports this process and has included these savings in its revised estimates as well as its own adjustments arising from prudency and efficiency review.**

**For 2011/12 onwards, a number of projects were found to require adjustment or further information and these will be subject to ongoing review by the Authority.**

*Contributed, Donated and Gifted Assets*

As noted above, the 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, 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.

Under the price monitoring framework accepted by the Government, the Authority recommended that the Government align the review processes for infrastructure charges and ongoing prices, and that the entities be made responsible for infrastructure charges. The Authority noted that, if this was not possible, the Authority would assess whether the method adopted by the entities to forecast contributed assets and capital contributions was reasonable in the circumstances.

Submissions

In its submission, the Department of Infrastructure and Planning questioned the benefits of permitting an entity to earn a return on contributed assets.

Allconnex indicated in its submission that it expect to receive $90.1 million in contributed, donated and gifted assets over the interim period and $169.2 million in capital (cash) contributions (see Table 37). The majority of these cash contribution occur in the form of Infrastructure Charge Schedules.

Allconnex also submitted that it intends to apply the asset offset approach to the treatment of contributed, donated and gifted assets and capital contribution from 2010/11 onwards. As such deductions were made to capital expenditure for these receipts from 2010/11.

Allconnex stated that when forecasting future capital contributions, developer contribution rates were obtained from either Gold Coast District PIP or planning scheme policies (PSPs) for Logan and Redland districts which were then indexed in line with these documents.

Historical revenue was then reviewed to provide an indication of actual growth compared to planned growth. The adjusted growth was then multiplied by the average infrastructure charge rate to arrive at the forecast value of contributions. Allconnex noted that in the case of the Gold Coast district the global financial crisis had a significant impact on infrastructure charges receipts in 2009/10.

**Table 37: Contributed, Donated and Gifted Assets & Capital Contributions ($m)**

| | *2008/09* | *2009/10* | *2010/11* | *2011/12* | *2012/2013* | *Total 2011-103* |
|---|---|---|---|---|---|---|
| Contributed Assets | 33.47 | 61.25 | 28.48 | 30.04 | 31.58 | 90.10 |
| Capital Contributions | 39.52 | 44.60 | 61.73 | 52.91 | 54.53 | 169.17 |
| **Total** | **72.99** | **105.86** | **90.21** | **82.95** | **86.11** | **259.27** |

*Source Allconnex (2010), SKM (2010), QCA*

Authority Analysis

As noted above, the Authority is to accept as prudent and efficient and include in the RAB via capital expenditure all contributed assets and capital contributions received between 1 July 2008 and 30 June 2010.

Under the approved price monitoring framework, the entities should not earn a return on, or of, contributed assets and capital contributions. This is in accordance with principle six of the National Water Initiative Pricing Principles (NRMMC, 2010). The Ministerial Direction allows the entities to choose an asset or revenue offset approach to the treatment of these assets from 1 July 2010. Both approaches ensure that a return on, and of, these assets cannot be charged to users.

The Authority notes the values of contributed assets and capital contributions for 2008/09 and 2009/10 cannot yet be verified as supporting information based on council financial records have not yet been provided for 2008/09 and for 2009/10 are not yet available.

From 1 July 2010, the water and wastewater components of the infrastructure charging regimes of Allconnex's three council areas (council PSPs and ICSs) transitioned to become Allconnex's SEQ Infrastructure Charges Schedule (ICS). In essence, Allconnex has inherited these upfront charges from councils. Under relevant legislation, Allconnex cannot significantly alter these charges unless they are approved by the Minister for Infrastructure and Planning.

The Authority also notes that the Government has convened an infrastructure charges taskforce to investigate the current infrastructure charging regime and opportunities to simplify charges and provide greater certainty. The taskforce has recently released an interim consultation report which includes maximum standard infrastructure charges, for comment. Should these maximum charges be adopted by Government they are likely to affect forecasts of contributed assets and cash contributions.

Given all of the above, the Authority considers it to be reasonable for Allconnex's forecasts of contributed assets and capital contributions from 1 July 2010 to be based on available council forecasts. For Allconnex, these forecasts are generally based on council growth and indexation factors. The Authority supports Allconnex's proposal to further investigate an appropriate method of forecasting contributed assets and capital contributions across all districts.

The Authority notes that Allconnex has applied the asset offset approach to the treatment of contributed assets and capital contributions from 1 July 2010. In line with this decision the Authority has reduced Allconnex's total capital expenditure on water by $34.8 million and wastewater by $55.4 million in 2010/11. This ensures customers are not paying twice for relevant assets.

**The Authority finds that Allconnex's method for the forecasting of contributed assets and capital contributions is reasonable.**

## 2.7 Rolling Forward the RAB

In accordance with the Ministerial Direction and normal regulatory practice, the initial regulatory asset base 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 take into account the latest available ABS CPI (all groups, Brisbane), however for 2009/10 the Queensland State Budget inflation forecast may be used.

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 rolled forward. Further, where the entity chooses to apply the asset base offset approach, capital contributions are deducted from the assets to be paid for by users.

### Allconnex Submission

Allconnex adopted a straight line approach to depreciation based on existing asset lives as contained in the councils fixed asset registers. In relation to indexation, Allconnex has applied the ABS CPI (all groups, Brisbane) of 2.0% for 2008/09 and 3.20% for 2009/10. A forecast inflation rate of 2.5% is applied for subsequent years. Disposals were based on written down asset values, adjusted to reflect their RAB value.

### Authority Analysis

The initial RAB at 1 July 2008 for Allconnex is $1.46 billion for water and $2.10 billion for wastewater. To this has been added actual capital expenditure to 30 June 2010 and the Authority's view of prudent and efficient capital expenditure in 2010/11.

The Authority engaged SKM to review the asset lives provided by Allconnex against those in their fixed asset registers. SKM found that the asset lives for existing assets provided in the templates align with supporting information.

SKM compared some specific Allconnex asset lives to benchmarks sourced from water industry codes of practice and found them to be reasonable.

As a result, for price monitoring in 2010/11 the Authority has accepted the asset lives as provided by Allconnex. It would be expected that a comprehensive review of individual asset lives would form part of any deterministic regulation regime.

Under the approved framework, the Authority recommended that forecast inflation from 1 July 2010 be estimated using forecasts of CPI as determined by the difference between the RBA return on the market rate for five year bonds and five year capital indexed bonds.

The Authority has adopted the ABS CPI for Brisbane for use in indexing the asset values in the RAB. For 2008/9 this was 2.02% and for 2009/10 it was 3.20%. In relation to forecast CPI from 1 July 2010, the Authority has adopted an estimate of 2.48% which is the difference between the RBA return on the market rate for five year bonds and five year capital indexed bonds, as proposed in the Authority's framework report.

The Authority has accepted Allconnex's approach to estimating disposals as this is consistent with council's financial records and their RAB values.

The Authority has rolled forward the initial RAB using the resulting values for capital expenditure, indexation and disposals (see Tables 38 and 39).

**Table 38: Asset Base Roll Forward – Water ($m)**

| | *2008/09* | *2009/10* | *2010/11* |
|---|---|---|---|
| Opening RAB | 1,456.95 | 1,521.85 | 1,613.28 |
| + Capital expenditure | 74.48 | 83.62 | 68.66 |
| + Inflationary gain | 30.14 | 51.11 | 41.24 |
| - Depreciation | -35.78 | -39.91 | -43.99 |
| - Disposals | -3.95 | -3.39 | -3.76 |
| - Capital Contributions[1] | - | - | -34.85 |
| Closing RAB | 1,521.85 | 1,613.28 | 1,640.58 |

[1] *Only relevant for asset base offset approach to the treatment of capital contributions. The Ministerial Direction mandates the revenue offset approach prior to 2010/11*
*Source Allconnex (2010), SKM (2010), QCA*

**Table 39: Asset Base Roll Forward – Wastewater ($m)**

| | *2008/09* | *2009/10* | *2010/11* |
|---|---|---|---|
| Opening RAB | 2,100.33 | 2,270.02 | 2,474.10 |
| + Capital expenditure | 186.49 | 195.95 | 246.75 |
| + Inflationary gain | 44.25 | 78.56 | 65.46 |
| - Depreciation | -55.50 | -63.27 | -70.67 |
| - Disposals | -5.56 | -7.15 | -6.52 |
| - Capital Contributions [a] | - | - | -55.36 |
| Closing RAB | 2,270.02 | 2,474.10 | 2,653.76 |

[a] *Only relevant for asset base offset approach to the treatment of capital contributions.*
*Source Allconnex (2010), SKM (2010), QCA*

The Authority's estimate of the regulatory opening asset base for price monitoring purposes in 2010/11 does not differ materially from that of Allconnex ($4,087.39 million compared to

Allconnex's $4,079.95 million.) Allconnex did not disaggregate the opening RAB by water and wastewater activities in its submission.

The Authority's estimate of the closing asset value as at 30 June 2011 is $1,640.59 million for water and $2,622.77 million for wastewater. Allconnex did not provide a closing asset value.

**The Authority's estimate of the regulatory opening asset base for price monitoring purposes in 2010/11 does not differ materially from that of Allconnex ($4,087.39 million compared to Allconnex's $4,079.95 million.)**

**The Authority's estimate of the closing asset value as at 30 June 2011 is $1,640.58 million for water and $2,622.77 million for wastewater.**

## 2.8 Return on Capital

The return on capital compensates investors for the opportunity cost of their investment. The Authority uses a nominal post-tax weighted average cost of capital (WACC) to determine the appropriate return on capital on the regulatory asset base, specifically Officer's 'vanilla' WACC3.

For this price monitoring review, the Authority has adopted its standard approach to estimate the WACC. To this end, the Authority engaged Dr Martin Lally to provide specialist advice in relation to appropriate WACC parameter values.

Whether the current approach should be applied in future is an issue to be explored over the interim period along with the form of regulation to be applied.

*Allconnex Submission*

Allconnex, in conjunction with Unitywater and QUU, engaged Competition Economists Group (CEG) to provide advice on WACC parameters.

Based on CEG advice, Allconnex (and Unitywater) proposed a WACC of 9.88% for price monitoring. Allconnex noted it adopted a WACC of 9.12% in setting prices for 2010/11. QUU adopted many of CEG's recommended parameter values in its submission but adjusted others to reflect the Authority's most recent approach.

The entities' and CEG's reasoning is outlined in Appendix B.

*Authority Analysis*

As noted above, many of the WACC parameters in the Allconnex submission are identical to those of the other entities.

Therefore, for clarity and to avoid repetition, the Authority has set out its detailed assessment of Allconnex's (and the other entities') WACC parameter values as per its standard approach in Appendix B. The analysis in this appendix is relevant to all entities.

As noted there, the main difference between Allconnex's and the Authority's WACCs is that under the Authority's standard approach it matches the term of the risk-free rate and debt margin to the term of the regulatory period. The Authority's standard approach has been explained in detail and applied by the Authority in its June 2010 Draft Decision on QR Network's 2010 DAU - Tariffs and Schedule F (which forms part of the undertaking approved in October 2010) and in its June 2010 Final Report on the Gladstone Area Water Board.

The Authority's WACC of 9.35% (Appendix B) is lower than Allconnex's proposed 9.88% for price monitoring, but higher than the 9.12% WACC it actually used in setting prices.

To calculate the return on capital, the Authority has applied the WACC to the entity's opening regulatory asset base and half the capital expenditure during the relevant year.

While the Authority has undertaken a comparison of the Authority's proposed return on capital for 2010/11 against that claimed by Allconnex, the Authority also sought to compare the Allconnex and Authority estimates for 2010/11 with those of councils for 2009/10.

It should be noted that such estimates of council's 2009/10 return on capital are based upon available records of dividends, actual cost of debt, retained earnings and capital gain (see Table 40). These do not necessarily reflect the cash benefit to councils over the costs of providing services as they do not necessarily reflect other benefits accruing to councils such as franchise fees. Further, capital gain is based on the Ministerials advised RAB.

Any such comparison should therefore be treated with caution. A review of past arrangements is not considered to be consistent with the terms of reference of this review which relates to Allconnex's forecasts of revenues and costs for 2010/11.

**Table 40: Return on Capital ($m)**

| | ***Costs 2009/10*** | ***Costs 2010/11*** | ***Water Costs 2010/11*** | ***Wastewater Costs 2010/11*** |
|---|---|---|---|---|
| Return on Capital (Allconnex)[24] | 288.56 | 422.28 | 162.40 | 259.88 |
| Return on Capital (QCA) | - | 390.87 | 152.29 | 238.58 |
| **Difference** | **-** | 31.41 | 10.11 | 21.30 |

*Source Allconnex data template and subsequent information – return on and of capital for 2009/10 are sourced from Allconnex's estimates of councils' statement of financial position. Return on capital in 2009/10 is the sum of interest, dividends, retained earnings and capital gain.*

**The Authority proposes to use a WACC of 9.35% for interim price monitoring.**

## 2.9 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 Direction requires the Authority 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. The Ministerial Direction also requires the Authority to accept the operational constraints imposed by the SEQ Urban Water Arrangements Reform Workforce Framework 2010. These constraints include that there are to be no forced redundancies during the interim period.

[24] At the time of price setting, Allconnex estimated a $391.74 million required return on capital for 2010/11, using a WACC of 9.12% applied to a higher asset base estimated at that time. The costs submitted to the Authority reflect more recent information available to Allconnex at the time of making its submission.

The Authority notes that these constraints do not apply to new employees engaged temporarily to perform work on the establishment of the entities or independent contractors or employees engaged by labour hire that provide services to either the entity or participant council.

The Authority has been directed to provide a commentary on changes in operating costs and their reasonableness over time.

The Authority engaged SKM to review the reasonableness of Allconnex's forecasts of operation expenditure for its water and wastewater activities from 1 July 2010.

*Allconnex's submission*

Allconnex proposed a total of $1.20 billion of operational expenditure over the interim period, comprised of $789 million of expenditure for water and $408 million for wastewater.

Allconnex allocated these operational expenditures to five cost categories - bulk water costs, employee costs, contractor cost, materials and services and corporate costs. Allconnex allocated operational costs to the drinking water, wastewater by sewer and trade waste services.

Bulk water costs account for 47% of Allconnex's total operating costs over the interim period, while materials and services account for a further 27% of total operating costs.

Operational Budget Development

Allconnex adopted a structured approach to the preparation and validation of operating expenditure which included: development, justification, evaluation and analysis, procurement, prioritisation; and delivery.

Allconnex noted that operating costs forecasts were developed taking into consideration labour and labour growth requirements, business establishment costs, known electricity increases, increases in the volume of water and wastewater, sludge disposal, chemicals and programs that requires investigations to guide network improvements, asset/data knowledge, regulatory requirements and non infrastructure solutions.

Allconnex forecasts of future operational expenditure budgets have been developed by applying a range of cost escalation indexes and growth factors. These indices and growth factors used by Allconnex to develop its budgets are outlined in Table 41.

**Table 41: Operating Cost Indexes and Growth Factors**

| *Cost Type* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Wage Growth | 4.0% | 4.0% | 4.0% |
| Employee Growth | % Population growth in each district plus 23 additional corporate positions | | |
| CPI Growth | 3.0% | 3.0% | 3.0% |
| Electricity Prices Growth | 10.0% | 10.0% | 10.0% |
| Service Level Agreements Price [a] | 3.0% | 3.0% | 3.0% |

[a] *Allconnex have forecast the total value of SLAs to reduce to zero by 2014-15*
*Source SKM (2010)*

Operational Expenditure forecasts

Allconnex's forecast total operational expenditure over the period 2010/11 to 2012/13 is set out in Tables 42 and 43 respectively.

**Table 42: Allconnex's Forecast Operating Costs Water 2010-2013 ($m)**

| | ***2010/11*** | ***2011/12*** | ***2012/13*** |
|---|---|---|---|
| Bulk Water Costs | 154.66 | 187.76 | 222.55 |
| Retail Operating Costs | | | |
| Customer service and billing | na | na | na |
| Regulated demand management costs | na | na | na |
| Community service obligation costs | na | na | na |
| Distribution Operating Costs | | | |
| Employee expenses | 23.83 | 25.48 | 27.67 |
| Contractor expenses | 1.65 | 0.94 | 0.12 |
| GSL payments | na | na | na |
| Materials and services) | 35.36 | 34.75 | 36.24 |
| Licence or regulatory fees | na | na | na |
| Natural resources management costs | na | na | na |
| Corporate costs | 12.57 | 13.06 | 13.21 |
| **Total Operating Costs** | **228.08** | **261.99** | **299.78** |

*na indicates that costs were not disaggregated to these categories in a manner consistent with the Authority's data template.*
*Source SKM (2010)*

**Table 43: Allconnex's Forecast Operating Costs Wastewater 2010-2013 ($m)**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Retail Operating Costs | | | |
| Customer service and billing | na | na | na |
| Regulated demand management costs | na | na | na |
| Community service obligation costs | na | na | na |
| Distribution Operating Costs | | | |
| Employee expenses | 36.94 | 38.96 | 41.72 |
| Contractor expenses | 1.68 | 0.97 | 0.16 |
| GSL payments | na | na | na |
| Materials and services | 69.63 | 71.02 | 76.25 |
| Licence or regulatory fees | na | na | na |
| Natural resources management costs | na | na | na |
| Corporate costs | 23.10 | 23.99 | 24.27 |
| **Total Operating Costs** | **131.34** | **134.93** | **142.40** |

*na indicates that costs were not disaggregated to these categories in a manner consistent with the Authority's data template.*
*Source SKM (2010)*

Allconnex has forecast that its total operational expenditure will increase from $359.42 million in 2010/11 to $396.92 in 2011/12 and then to $442.2 million in 2012/13; an average annual increase of 10.9%.[25]

Allconnex's operating costs for water and wastewater are forecast to increase over the interim period by 31% and 8% respectively. Allconnex stated in its submission that bulk water costs are both the largest single operating cost component and the fastest growing over the forecasting period. Allconnex also identified that customer and volume growth and increased electricity prices lead to cost increases over the forecasting period.

*Authority's Analysis*

The Authority engaged SKM to review the reasonableness of Allconnex's operational expenditure. The assessment of the reasonableness of operational expenditure was intended to take into account the relevant service standards, Frontier's revised demand forecasts, possible substitution between capital and operating expenditure and the potential for efficiency gains and economies of scale.

Adequacy of Operational Expenditure Data Information Provision

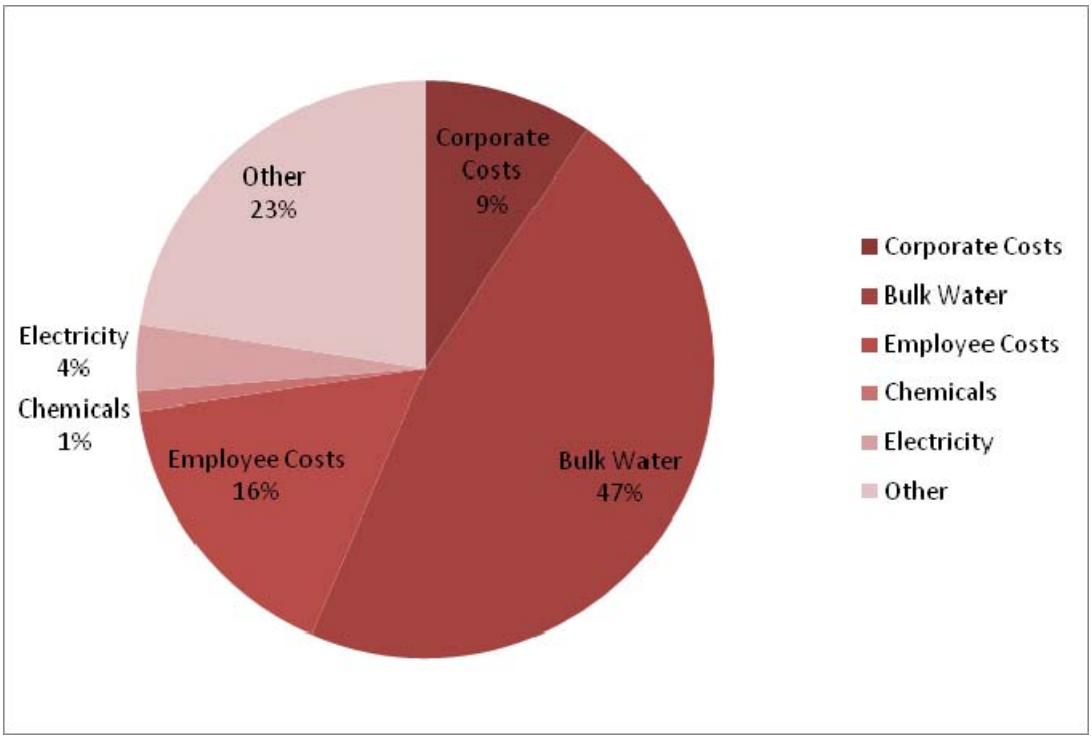
Prior to assessing the reasonableness of proposed operational expenditure, SKM reviewed Allconnex's submission to ensure that it provided a comprehensive and accurate information.

[25] At the time of price setting, Allconnex estimated $359.36 million in operating expenditure for 2010/11. The costs submitted to the Authority reflect more recent information.

Allconnex's submission did not assign operating costs against all of the cost categories listed in the Authority's Information Requirements for 2010/11, with some cost categories aggregated into other categories.

In response to a request for information from SKM, Allconnex provided operational expenditure on a more disaggregated basis which separately identified electricity and chemical costs (Chart 4).

**Chart 4: Allconnex Operating Costs 2010/11 to 2012/13**




*Source SKM (2010)*

Operational Budgeting

SKM reviewed the policies and procedures followed by Allconnex to ensure that they represent good industry practice. SKM reviewed the budget guidelines used in the preparation of the 2010/11 operational budget and found that the guidelines provide a comprehensive guide to a range of aspects associated with the budget development and approval process including:

- outline of the budget process;
- who has approved the process;
- responsibilities;
- budget approval and development;
- protocols for changes and inter-council communications;
- parameters to be applied (e.g. CPI);
- review and approval programme; and

- schedules to be produced.

SKM noted that the operational budgets are underpinned by Allconnex Water's Enterprise Financial Model (EFM). The chemical and electricity components in particular, use historical analysis of resource usage and growth factors to forecast chemical and electricity usage in subsequent years. SKM noted that integration of the three council water businesses, including the streamlining of systems and standards has been identified by Allconnex as a key undertaking going forward.

In regards to the budget process adopted by Allconnex, SKM found that the operational expenditure budget process represents good industry practice.

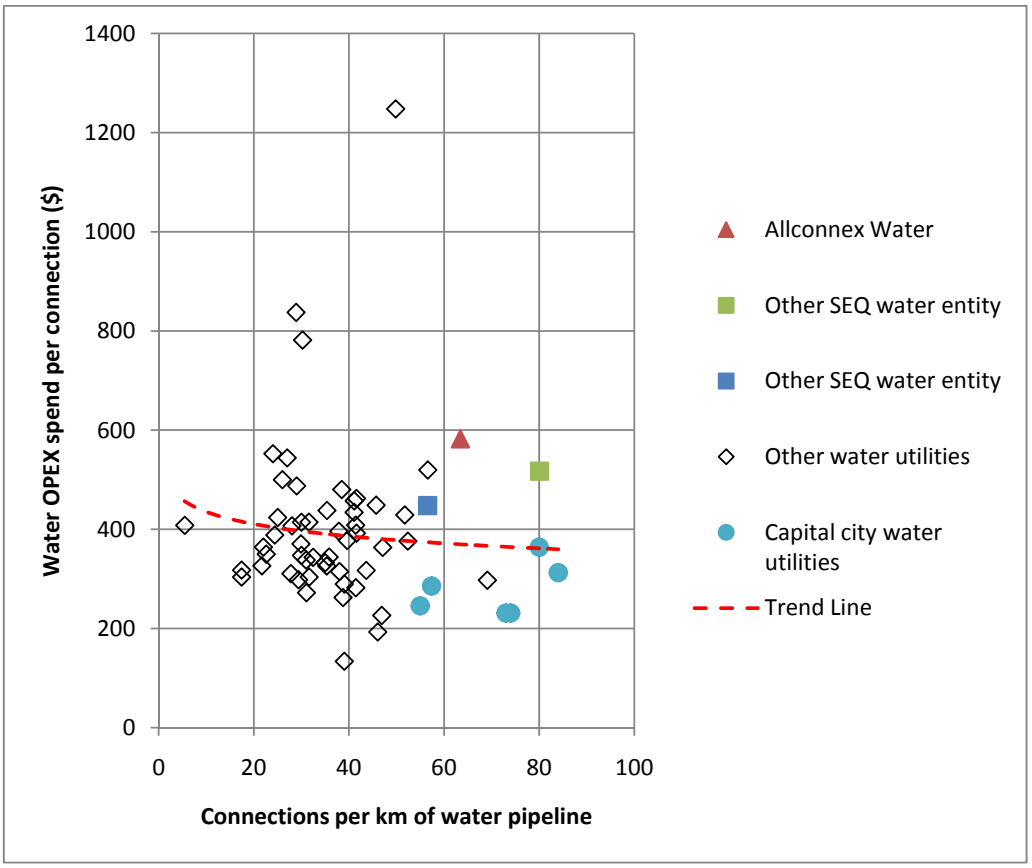
Reasonableness

SKM benchmarked Allconnex's 2010/11 aggregate operational expenditure for water and wastewater against a range of other Australian utilities using two key benchmarks. For water Allconnex's relative performance was measured using both opex spend per connection and the number of connections per kilometre (Chart 5).

SKM found that Allconnex's Water operational expenditure for water in 2010/11 was generally higher than those of similar sized water utilities in other jurisdictions. SKM noted that this was due in part to higher SEQ bulk water costs. However, when bulk water costs are removed from this analysis SKM found that on a per connection basis, Allconnex Water's controllable operating expenditure for 2010/11($188/connection) remained higher than its interstate peers (Sydney $139/connection and Melbourne $97-$168/connection).

The Authority notes that SKM's benchmarks for operating costs for other water utilities (barring those in SEQ) assume other entities' costs per connection have remained constant in real terms since 2008/09. There would therefore appear to be some further opportunity for efficiency gains to achieve best practice.

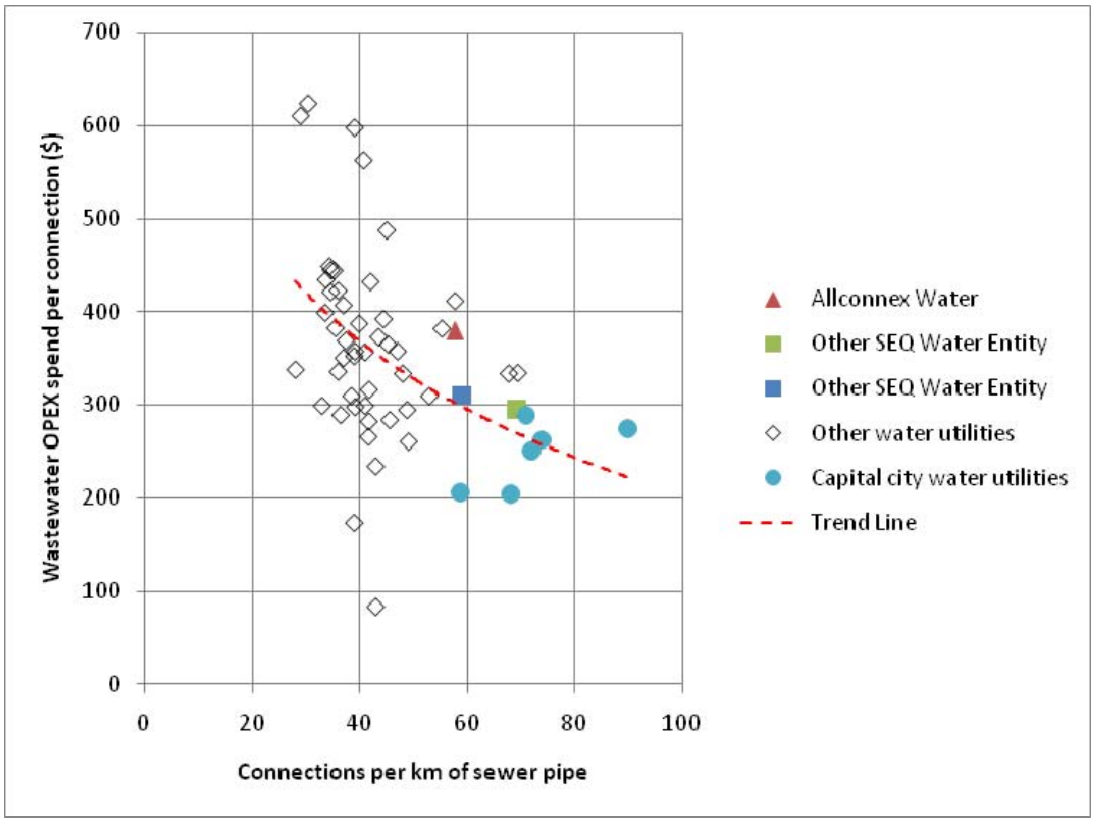
**Chart 5: Water Operational Expenditure**




*Source SKM (2010) National Water Commission (2010) .*

Using the same method for Allconnex's wastewater operational expenditure (Chart 6). SKM concluded that Allconnex wastewater operational expenditure appears above trend. SKM noted that the Pimpama Coomera recycled water scheme operated by Allconnex contributes to increased operational costs.

**Chart 6: Wastewater Operational Expenditure**




*Note CPI has been applied to other utilities data to inflate the costs contained in the 2008/9 NWC Performance Report to 2010/11*
*Source SKM (2010) National Water Commission (2010)*

The Authority notes that this high-level analysis shows where Allconnex's operating costs for 2010/11 fall within a range of values bounded by other water utilities, and indicates the extent of operating efficiencies that could potentially be achieved.

The Authority notes that economic regulators in other jurisdictions have applied efficiency gains to water retail businesses' proposed operating expenditures of up to 3.5% (NWI Steering Group on Water Charges 2007).

Taking into account the above, the Authority considers it is reasonable to assume Allconnex should be able to achieve efficiency gains in its non-bulk operating costs in 2010/11. The Authority has therefore sought to impose a high level efficiency target for Allconnex in 2010/11 of 2% of total non-bulk operating costs. This results in a reduction of total operational expenditure of $4.1 million.

The Authority notes that another SEQ entity has identified non-bulk operational savings of up to 16.7%. Given that this has not been fully investigated at this stage, the Authority is not currently minded to apply this saving to Allconnex in this review. However, the Authority will be seeking further information on this matter and will be pursuing efficiency gains from amalgamation over the interim price monitoring period and beyond. Efficiency targets for 2011/12 and 2012/13 are discussed further below.

SKM then sought to review key components of Allconnex's operating expenditure.

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Reasonableness of Sampled Costs

SKM selected a sample of 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. SKM has reviewed bulk water costs, employee costs, corporate costs, electricity and chemical costs. This sample captures 77% of the total operational expenditure (see Table 44) over the forecast period.

**Table 44: Allconnex Operating Costs ($m)**

| *Cost Centre* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| *Bulk water* | 154.66 | 187.76 | 222.55 |
| *Corporate Cost*[a] | 36.45 | 37.86 | 38.31 |
| *Employee costs* | 64.15 | 68.05 | 73.24 |
| *Electricity* | 13.44 | 14.93 | 16.73 |
| *Chemicals* | 4.14 | 4.31 | 4.53 |
| ***Total Sample*** | **272.84** | **312.91** | **355.36** |
| ***Total Expenditure*** | **359.42** | **396.92** | **442.18** |

*Source Allconnex (2010), SKM (2010)*

(a) Bulk Water Cost

SKM examined Allconnex's tariffs and confirmed that the bulk water tariffs charged to customers are consistent with those charged by the SEQ Water Grid Manager. SKM found that Allconnex's operating budget demonstrates that prices charged by the SEQ Water Grid Manager for bulk water storage, treatment and delivery are passed through to customers in full.

The review of Allconnex's demand forecasts for bulk water by Frontier Economics recommended adjustments to the volume of water sales forecast by Allconnex (see section 2.4) and made corresponding changes to bulk water purchases. SKM has accepted Frontier Economics' recommendations and has adjusted Allconnex's operating costs associated with the purchase of bulk water for 2010/11 (see Table 45). Bulk water costs for water increase slightly as a result of these adjustments.

**Table 45: 2010/11 Revised Bulk Water Costs**

| *Geographic Area* | *Allconnex Submitted Bulk Water Cost ($millions)* | *Allconnex Submitted Demand (ML)* | *Frontier Revised Demand (ML)* | *Unit Price ($/kL)* | *SKM Revised Bulk Water Cost ($million)* |
|---|---|---|---|---|---|
| Gold Coast | $100.30 | 59,547.3 | 60,322.7 | 1.685 | $101.64 |
| Logan | $42.05 | 22,709.0 | 22,755.4 | 1.843 | $41.93 |
| Redland | $12.32 | 13,147.0 | 13,229.8 | 0.932 | $12.30 |
| **Total** | **$154.67** | **95,403.3** | **96,308** | **n/a** | **$155.90** |

*Source Allconnex (2010), Frontier Economics (2010), Queensland Water Commission (2010)*

On 5 December 2010, the Treasurer and Minister for Natural Resources, Mines and Energy and Minister for Trade announced a series of reforms to the SEQ water industry. Included in these reforms was a revision to the long term bulk water price path from 2011/12. Bulk water prices for 2010/11 were unchanged. The Authority has revised the Allconnex bulk water expenditure in 2011/12 and 2012/13 to reflect these revised prices. These changes reduce the Allconnex bulk water expense by $7.78 million over the interim period.

(b) Corporate Costs

Corporate costs include such items as CEO office, personnel cost in the corporate division and support staff, finance, marketing, information technology, legal & governance, training, human resources and payroll. SKM found that the proportion of Allconnex's total operational expenditure spent on corporate cost is expected to decline over the period from 10% in 2010/11 to 8.5% in 2012/13.

Allconnex has not applied a growth factor to corporate costs as it has with other costs categories' as corporate costs are not driven by growth in customers or demand. Instead, Allconnex applied only an annual cost escalation of 3.0%.

SKM found that the use of an estimate 3.0% reasonable for the escalation of corporate costs.

SKM noted that included in the corporate costs for Allconnex were several service level agreements (SLA). These services are generally a continuation of pre-existing systems and services to enable an orderly transition to Allconnex Water. They include: financial accounting; payroll services; development and management charges; call centre; inventory services and depot sites and head office accommodation. SKM noted that the costs associated with these SLAs are forecast to reduce as Allconnex develops its own systems and capabilities and becomes less reliant on legacy systems and services from councils.

SKM considered amalgamation of the three council water businesses into Allconnex should ultimately achieve efficiency gains in service delivery, economics of scale and reduced corporate costs.

(c) Employee Costs

Under the Direction, the Authority must accept the operational constraints imposed by the SEQ Urban Water Arrangements Reform Workforce Framework 2010 (SEQ Framework). SKM noted the most significant constraint is that there are to be no forced redundancies or overall loss of employment directly as a result of the water reforms, during the reform period. Also, there are to be no forced relocations within 12 months from the date of transfer.

SKM noted that the operational constraints imposed by the SEQ framework limit the ability of Allconnex to achieve full labour efficiency

The increase in Allconnex employee costs (Table 46) were attributed to both an increase in employee numbers and labour cost increases.

Allconnex have in their submission nominated a growth in employee numbers of 2.1% in 2011/12 and 3.6% in 2012/13, based upon the population growth in each district and an increase in corporate staff. The cost escalation rates for labour costs were set at 4.0% for both 2011/12 and 2012/13.

In subsequent information provided to the Authority, Allconnex Water noted that to the end of November 2010 17 staff had left but Allconnex had hired 50 new employees.

SKM benchmarked Allconnex labour cost escalation index against both the historic ABS Labour Price Index for the hourly rates for public servants in the Electricity, Gas, Water and Waste Services and the AERs forecasts of wage price increases in utilities sector (see Table 46).

**Table 46: Comparison of Labour Cost Escalation Indices**

| *Year* | *2008/09* | *2009/10* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Allconnex | - | - | - | 4.00% | 4.00% |
| Australian Energy Regulator | 4.90% | 3.60% | 3.80% | 4.20% | 3.90% |
| ABS, Labour Price Index | 4.38% | 4.40% | | | |

*Source Australian Energy Regulator (2010), Australian Bureau of Statistics (2010)*

SKM concluded that Allconnex's labour cost indices are in line with both the AER forecast indices and the historic trends as derived from the Labour Price Index. The labour cost indices are therefore considered reasonable. SKM also found that the growth factors used by Allconnex to determine employee costs are reasonable to build required capability and service growth that is increasing at a higher rate.

The Authority notes that natural attrition should be a source of potential efficiencies even within the constraints of the SEQ framework, however the natural attrition of required skills will require replacement through training, relocation or replacement.

However, in the absence of a readily available benchmark, the Authority has not sought to attribute quantifiable efficiency gains specifically to labour costs in this review. However, the Authority intends to pursue this issue further over the interim period, and an overall target for efficiency gains should be pursued.

(d) Electricity Costs

SKM reviewed the model used by Allconnex to develop forecasts of electricity costs. SKM found that the model provides for the calculation of electricity costs taking into account forecast water and wastewater flows as well as applying a 10% cost escalation rate for each year of the interim period.

SKM found that it is reasonable to assume that electricity consumption will reflect the increase or decrease in the volume of water and wastewater being pumped or processed.

Allconnex was unable to provide detailed information as to the proportion of its electricity needs met via contestable market contracts and that sourced from regulated tariffs.

SKM benchmarked Allconnex's electricity cost escalation factors against the Queensland Benchmark Retail Cost Index (BRCI) and the Australian Bureau of Statistics Consumer Price Index for electricity (see Table 47). SKM found that Allconnex' price escalation for regulated tariffs in 2010/11 (10%) to be (broadly) consistent with both the BRCI (13.29%) and CPI for electricity (15.5%).

**Table 47: Electricity Cost Escalation Benchmarks**

| *Year* | *2008/09* | *2009/10* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Allconnex | - | - | 10.00% | 10.00% | 10.00% |
| BRCI | 5.38% | 11.82% | 13.29% | 5.83%[a] | |
| ABS CPI for electricity in Brisbane | 11.60% | 8.30% | 15.50% | | |

*Note* [a] *QCA BRCI Draft Decision (2010)*
*Source QCA(2010), Australian Bureau of Statistics (2010), Allconnex (2010)*

SKM noted that the type of electricity purchase arrangement will have significant impact on Allconnex's electricity costs. The Authority supports this view and notes that Allconnex should seek out the most efficient option within its regulatory and contractual obligations.

The Authority notes that SKM's benchmarking does not take account of non-regulated price changes. As Allconnex could not provide the share of its electricity purchases from regulated and contestable sources, the Authority has used available information from other sources to estimate a 25% share of total costs from electricity supplied under regulated tariffs and 75% from contestable market contracts.

The Authority has examined a number of Allconnex's contestable market contracts and has found that the price increases implied in these contracts is 8.18%[26] for 2010/11. Regulated tariffs increased by 13.29% (the 2010/11 BRCI).

Based on the above the Authority estimates that Allconnex's weighted average electricity price growth for 2010/11 under its contractual obligations may be around 9.5%[27]. The Authority therefore finds that Allconnex's proposed price escalation factor of 10% for 2010/11 is reasonable.

In estimating the potential price growth in contestable contracts for 2011/12, the Authority notes that network and distribution charges will increase by 6.8% per annum. Assuming that energy charges do not increase over this period and the share of network costs also remains constant, contestable electricity prices will grow by 3.20%. Regulated tariffs are forecast to increase by 5.83% in 2011/12.

Based on the above, the Authority has calculated a weighted average electricity price increase of 3.85% for 2011/12. [28] (Prior to the release of the Authority's Draft Decision on the 2011/12 BRCI, SKM estimated a 10% increase as reasonable – this view is now superseded by subsequent events).

[26] 8.18% = 17.4% x 0.47. This assumes energy prices remain constant, and a 17.4% increase in network and distribution costs that comprise 47% of total costs as per the 2010/11 BRCI.
[27] 9.5% = (0.75 x 8.18) + (0.25 x 13.29).
[28] 3.85% = (0.75 x 3.20) + (0.25 x 5.83).

The Authority has applied the same price increase for 2012/13 as for 2011/12.[29] The Authority has also revised Allconnex's growth forecasts to align with the percentage change in bulk water volumes arising from Frontier Economics' revised demand forecasts (see Table 48).

**Table 48: Revised Allconnex Electricity Costs ($m)**

| *Year* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Water | 1.86 | 1.97 | 2.10 |
| Wastewater | 11.80 | 12.34 | 13.13 |
| **Revised Total** | **13.66** | **14.31** | **15.23** |
| **Allconnex Proposed** | **13.44** | **14.93** | **16.73** |
| **Variance** | **1.7%** | **-4.2%** | **-9.0%** |

*Source SKM (2010), Allconnex (2010), QCA (2010),*

(e) Chemical costs

Chemicals are used to treat drinking water before delivery to customers, and for wastewater prior to discharge. The need for chemical use is dictated by drinking water standards and compliance with operational licenses for wastewater discharge.

Allconnex's expenditure on chemicals is forecast to increase from $4.1 million in 2010/11 to $4.5 million in 2012/13. In determining these forecasts, Allconnex have used a general price escalation index of 3.0%.

SKM noted that transport costs are recognised as a significant cost component for chemicals (the cost of transporting chemicals to depots and throughout the distribution network).

The amalgamation of the three former council water businesses increases the purchasing power of Allconnex with potential efficiency gains or reduction in cost through economies of scale through the consolidation of supplier contracts and purchasing power.

SKM noted that the Allconnex's Financial Model includes identified cost saving through synergies that are forecast to occur beyond 2012/13. SKM considered that these opportunities exist in 2011/12 and 2012/13 and should be allowed for in the forecast budgets.

SKM concluded that Allconnex Water's proposed cost escalation indices for chemical costs are not reasonable and have revised this to 2.5% for 2011/12 and 2012/13. SKM noted that this cost escalation allows for unit prices to increase in line with the upper CPI bound formed by the RBA target band, and 0.5% gain through efficiencies and economies of scale (see Table 49).

The Authority has further adjusted Allconnex's chemical costs to reflect the revised estimates of demand provided by Frontier Economics.

[29] This does not indicate any view of the BRCI for 2012/13, on which the Authority has not yet formed a view.

**Table 49: Revised Allconnex Chemical Costs ($m)**

| *Year* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Water | 0.08 | 0.08 | 0.09 |
| Wastewater | 4.13 | 4.25 | 4.46 |
| **Revised Total** | **4.21** | **4.34** | **4.55** |
| **Allconnex Proposed** | **4.14** | **4.31** | **4.53** |
| **Variance** | **1.7%** | **0.6%** | **0.5%** |

*Source SKM (2010), Allconnex (2010), QCA*

Efficiency Gains and Other Amendments

As noted above, Allconnex's submitted operating costs for 2010/11 did not include any savings from efficiency gains therefore the Authority has sought to impose an efficiency target of 2% in non-bulk operating costs.

The Authority notes that even with these gains for 2010/11, SKM's analysis indicates there remains scope for ongoing efficiency gains to bring Allconnex to the forefront of operating efficiency. The Authority expects that further operating efficiencies in non-bulk operating costs should be achievable over the interim period, of at least 2% per annum.

The Authority has therefore revised its estimates of operating expenditure for these years (see Table 50).

**Table 50: Further Efficiency Gains ($m)**

| | *2011/12* | *2012/13* |
|---|---|---|
| QCA efficiency target - water | -2.98 | -4.64 |
| QCA efficiency target - wastewater | -5.37 | -8.43 |
| **Total Efficiency Gains** | -8.35 | -13.07 |

*Source QCA*

The Authority notes that Allconnex did not include the Authority's regulatory fees in its operational expenditure forecasts. The Authority has included these regulatory fees in the revised operating costs, allocated on the basis of 2010/11 revenues. In addition to the Authority's fee, the Authority has also amended Allconnex regulatory and licence fees to include the newly established Queensland Water and Electricity ombudsman fees (see Table 51).

**Table 51: Revised Allconnex Regulatory and Licence Fees ($m)**

| *Year* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Water | 0.43 | 0.51 | 0.54 |
| Wastewater | 0.36 | 0.43 | 0.45 |
| **Revised Total** | **0.79** | **0.94** | **0.99** |

*Source QCA*

Revised Operating Expenditure

The Authority's revised operational expenditure for Allconnex for the interim period for water and wastewater over are outlined in Tables 52 and 53 respectively.

For water, the Authority has increased Allconnex's operating expenditure ($228.08 million) by 0.10% in 2010/11, mainly due to the increased bulk water and other costs arising from Frontier Economics' revised bulk water demand forecasts which were partially offset by efficiency gains. For wastewater, the Authority has decreased Allconnex's operating expenditure ($134.34 million) by 1.53% mainly due to the implementation of efficiency targets.

**Table 52: SKM Assessment Reasonable Operating Costs Water 2010-2013 ($m)**

| | ***2010/11*** | ***2011/12*** | ***2012/13*** |
|---|---|---|---|
| Bulk Water Costs | 155.91 | 184.26 | 215.81 |
| Retail Operating Costs | | | |
| Customer service and billing | na | na | na |
| Regulated demand management costs | na | na | na |
| Community service obligation costs | na | na | na |
| Distribution Operating Costs | | | |
| Employee expenses | 23.83 | 25.48 | 27.67 |
| Contractor expenses | 1.65 | 0.94 | 0.12 |
| GSL payments | na | na | na |
| Materials and services | 35.39 | 34.58 | 35.85 |
| Licence or regulatory fees | 0.43 | 0.51 | 0.54 |
| Natural resources management costs | na | na | na |
| Corporate costs | 12.57 | 13.06 | 13.21 |
| **Total Operating Costs** | **229.78** | **258.83** | **293.20** |
| **QCA Efficiency gains** | **-1.48** | **-2.98** | **-4.64** |
| **Total Operating Costs** | **228.30** | **255.84** | **288.55** |
| **Allconnex Proposed Total** | **228.08** | **261.99** | **299.78** |
| **Variance** | **0.10%** | **-2.35%** | **-3.75%** |

**Table 53: SKM Assessment of Reasonable Operating Costs Wastewater 2010-2013($m)**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Retail Operating Costs | | | |
| Customer service and billing | na | na | na |
| Regulated demand management costs | na | na | na |
| Community service obligation costs | na | na | na |
| Distribution Operating Costs | | | |
| Employee expenses | 36.94 | 38.96 | 41.72 |
| Contractor expenses | 1.68 | 0.97 | 0.16 |
| GSL payments | na | na | na |
| Materials and services | 69.89 | 70.02 | 73.96 |
| Licence or regulatory fees | 0.36 | 0.43 | 0.45 |
| Natural resources management costs | na | na | na |
| Corporate costs | 23.10 | 23.99 | 24.27 |
| **SKM Operating Costs** | **131.96** | **134.36** | **140.56** |
| **QCA Efficiency gains** | **-2.64** | **-5.37** | **-8.43** |
| **Total Operating Costs** | **129.33** | **128.99** | **132.13** |
| **Allconnex Proposed Total** | **131.34** | **134.93** | **142.40** |
| **Variance** | -1.53% | -4.40% | -7.21% |

The Authority has adjusted for revised demand forecasts, bulk water prices, regulatory fees and electricity costs, but notes these will be subject to ongoing review in 2011/12 and 2012/13. It is reasonable to expect that Allconnex may realise further operational efficiencies in the future as it achieves economies of scale. The Authority also notes that there may be opportunities even within the constraints imposed by the SEQ workforce framework.

**Table 54: Comparison between Allconnex and Authority's Operational Expenditure ($m)**

| | *2010/11* | *2011/12* | *2012/2013* | *Total* |
|---|---|---|---|---|
| Allconnex forecast | $359.42 | $396.92 | $442.18 | $1,198.52 |
| QCA forecast | $357.63 | $384.83 | $420.68 | $1,163.14 |
| **Difference** | **-0.50%** | **-3.05%** | **-4.86%** | **-$35.38** |

*Source Allconnex 2010 and QCA calculations*

**Allconnex's forecast operational expenses for 2010/11 are broadly reasonable, although the Authority has adjusted for revised demand forecasts, bulk water prices, chemical costs and regulatory costs.**

**The Authority expects that Allconnex should be able to realise operational efficiencies in each year of the interim price monitoring period as it achieves economies of scale. An additional at least 2% efficiency gains in non-bulk operating costs should also be pursued in 2011/12 and 2012/13.**

## 2.10 Costs

*Introduction*

The Direction requires the Authority to compare the entities' revenues with the Authority's 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, including any capital gain;

(c) return of capital, allowing for depreciation of assets over time.

The Direction also requires the Authority to take into account any revenue glide path submitted by the entity for the purpose of avoiding price shocks over the interim period. In its information request to the entities, the Authority required full details of the method used for smoothing and underlying data to be provided.

The impact of recent floods in SEQ has not been taken into account in this Draft Report.

*Allconnex's submission*

Allconnex's initial submission did not include an estimate of total costs for 2009/10. However, the Allconnex data template provided information on bulk water costs and distribution and retail operating and maintenance costs, and the data to calculate tax, return on capital and return of capital for each activity from 1 July 2008. The Authority has used Allconnex's data template to estimate Allconnex's 2009/10 total costs, for broad comparative purposes. Allconnex provided its forecast of total costs for 2010/11 (see Table 55).

Allconnex indicated that its estimate of tax is based on using regulatory depreciation as a proxy for tax depreciation, a notional interest expense, and adjustments for the (expected) non-assessable treatment of developer gifted assets.

The relevance of these costs to Allconnex's pricing policies for 2010/11 is discussed further in section 2.13.

**Table 55: Allconnex Total Costs ($m)**

| | *Costs 2009/10* | *%* | *Allconnex Costs 2010/11* | *%* | *Allconnex Water Costs 2010/11* | *%* | *Allconnex Waste-water Costs 2010/11* | *%* |
|---|---|---|---|---|---|---|---|---|
| Bulk Water Costs | 120.20 | 17.3% | 154.66 | 16.9% | 154.66 | 35.1% | | |
| Distribution and Retail Costs | | | | | | | | |
| Other operating costs | 165.38 | 23.9% | 204.76 | 22.4% | 73.42 | 16.6% | 131.34 | 27.7% |
| + Tax | 15.00 | 2.2% | 15.44 | 1.7% | 5.94 | 1.3% | 9.50 | 2.0% |
| + Return on Capital | 288.56 | 41.6% | 422.28 | 46.2% | 162.40 | 36.8% | 259.88 | 54.9% |
| + Return of Capital | 103.81 | 15.0% | 117.80 | 12.9% | 44.75 | 10.1% | 73.05 | 15.4% |
| **Total Costs** | 692.95 | 100.0% | 914.94 | 100.0% | 441.17 | 100.0% | 473.77 | 100.0% |

*Source Allconnex data template and subsequent information – return on and of capital for 2009/10 are sourced from Allconnex's estimates of councils' financial position (pp16-17 of their submission). Return on capital in 2009/10 is the sum of interest, profit after tax (p.17), and inflationary capital gain (p.16).*

*Authority's Analysis*

On the basis of the Authority's analysis of the regulatory asset base, asset lives, cost of capital, and operating and maintenance costs, the Authority has calculated the total costs of carrying on Allconnex's water and wastewater activities for 2010/11 (see Table 56).

In doing so, the Authority has calculated single year or 'unsmoothed' cost estimates, to allow for comparison with Allconnexs revenues and costs, which were predominantly set on this basis.

For both water and wastewater, the Authority's estimate of total costs lies below Allconnex's estimate. For water, the Authority's estimate of total costs of $427.71 million is 3.05% below that of Allconnex. For wastewater, the Authority's estimate of total costs of $444.61 million is 6.15% below that of Allconnex.

**Table 56: Comparison of Allconnex and QCA Costs for 2010/11 ($m)**

| | **Water Allconnex Costs** | ***Water QCA Costs*** | ***QCA % of total*** | **Wastewater Allconnex Costs** | ***Wastewater QCA Costs*** | ***QCA % of total*** |
|---|---|---|---|---|---|---|
| Bulk Water Costs | 154.66 | 155.91 | 36.5% | | | |
| Distribution and Retail Costs | | | | | | |
| Other operating costs | 73.42 | 72.39 | 16.9% | 131.34 | 129.33 | 29% |
| + Tax | 5.94 | 3.13 | 0.7% | 9.50 | 4.13 | 1% |
| + Return on Capital | 162.40 | 152.29 | 35.6% | 259.88 | 240.03 | 54% |
| + Return of Capital | 44.75 | 43.99 | 10.3% | 73.05 | 71.12 | 16% |
| **Total Costs** | **441.17** | **427.71** | **100.0%** | **473.77** | **444.61** | **100%** |

*Source Allconnex subsequent information and QCA calculations.*

Key differences between Allconnex's submitted costs and the Authority's arise from:

(a) bulk water costs – the Authority has slightly higher bulk water cost estimates due to the Authority's revised demand volumes for 2010/11;

(b) other operating costs – the Authority has slightly lower estimates of other distribution and retail operating costs due to the inclusion of its efficiency target;

(c) tax – the Authority has a lower tax allowance for 2010/11 due to differences in the cost of capital and the level of deductions for depreciation.

The Authority's approach to tax is consistent with that set out in the relevant tax manual for the entities, whereby the value of a contributed asset or the amount of the contribution towards an asset will not be assessable and no deductions of any kind will be allowed in respect of the value of the contributed asset or in respect of the amount of the contribution towards an asset (LGTER 2010); and

(d) the return on capital – the Authority has lower cost estimates than those submitted by Allconnex, as a WACC of 9.88% was used by Allconnex compared with 9.35% for the Authority (Appendix B) and this was applied by the Authority to a lower capital base arising from efficiencies in capital expenditure;

(e) the return of capital – the Authority has lower estimates arising from minor differences in the indexation of the underlying assets and this was applied to a lower capital base.[30]

[30] Allconnex had lower depreciation ($111.38m), lower tax (11.36m), lower return on capital ($391.74m) and a deduction for other capital revenue (of 10.68m) at the time of price setting. Estimates in their submission reflect more recent information.

## 2.11 Revenues for 2010/11

For price monitoring purposes, Allconnex's revenues as forecast at the time of price setting form the relevant forecast revenues. These revenue forecasts for 2010/11 are consistent with 2010/11 prices.

*Allconnex's submission*

Allconnex subsequently identified its revenue forecasts for water and wastewater at the time of price setting as per Table 57.

**Table 57: Allconnex 2010/11 Revenue Forecasts for water and wastewater ($m)**

| | ***Allconnex Revenues*** |
|---|---|
| Water | 320.66 |
| Wastewater | 270.98 |
| **Total revenue** | **591.63** |

*Source Allconnex subsequent information*

## 2.12 Comparing Revenues with MARs

Under the Direction, the Authority must compare the entities' revenues with the MAR.

The MAR is 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, where a revenue offset approach has been adopted. Under the Direction the entities have the choice of adopting a revenue offset or asset offset approach to capital contributions.

*Allconnex submission*

Allconnex estimate of its total costs of carrying on its water and wastewater activities in 2010/11 is presented in Table 58 below (these costs were first identified in section 2.9). Allconnex has chosen an asset offset approach to the treatment of capital contributions.

A comparison of Allconnex's total costs and Allconnex's revenue forecast (at the time of price setting) is also provided in the table below. This comparison shows under-recovery in both water and wastewater activities, with total under-recovery of $213.88 million or 26.55%.

Allconnex noted that increasing prices in 2010/11 to achieve full cost recovery (MAR) would result in undue customer impacts and is inconsistent with the State's request to the business to avoid price shocks. Therefore, it has adopted a transitional approach to pricing which, for 2010/11, incorporates price increases which are significantly less than required to achieve MAR.

Allconnex submitted that its pricing arrangements for 2010/11 for core water and wastewater services have been set such that a consistent percentage increase is applied to all charges within a particular council area and service. The level of the percentage increase reflects the percentage required to achieve MAR up to a maximum of 20%. (Practically, this results in a lower percentage increase for Redland customers, with higher increases for Logan and Gold Coast customers, since Redland's charges for 2009/10 were already near its MAR.)

**Table 58: Allconnex 2010/11 Total Costs and Total Revenues ($m)**

| | Water Allconnex 2010/11 | Wastewater Allconnex 2010/11 | Total |
|---|---|---|---|
| Total Costs (Allconnex) | 441.17 | 473.77 | 914.94 |
| - Indexation (Allconnex) | -42.08 | -67.34 | -109.42 |
| - Capital contributions (Allconnex) | n/a | n/a | n/a |
| **Total Costs (Allconnex)[31]** | **399.09** | **406.43** | **805.52** |
| Total Revenues (Allconnex) | 320.66 | 270.98 | 591.64 |
| **Total Revenues - Costs (Allconnex)** | **-78.43** | **-135.45** | **-213.88** |
| **Per cent of Total Costs (Allconnex)** | **-24.46%** | **-19.71%** | **-26.55%** |

*Source Allconnex subsequent information*

*Authority Analysis*

A comparison of Allconnex's forecast revenues of its water and wastewater activities with the maximum allowable revenue based on the Authority's estimate of the total costs of carrying on Allconnex's water and wastewater activities, is provided in Table 59.

The Authority's MAR is unsmoothed and based on 2010/11 total costs, and the asset offset approach to the treatment of capital contributions is adopted, as per Allconnex's approach.

**Table 59: Comparison of Allconnex Revenues and the QCA MAR ($m)**

| | Water 2010/11 | Wastewater 2010/11 | Total |
|---|---|---|---|
| Total Costs (QCA) | 427.71 | 444.61 | 872.32 |
| - Indexation (QCA) | -41.24 | -65.85 | -107.09 |
| - Capital contributions (QCA) | n/a | n/a | n/a |
| **Total Costs (QCA MAR)** | **386.47** | **378.76** | **765.23** |
| Total Revenues (Allconnex) | 320.66 | 270.98 | 591.64 |
| **Total Revenues – Costs (QCA)** | **-65.81** | **-107.78** | **-173.59** |
| **Per cent of Total Costs (QCA)** | **-17.03%** | **-28.46%** | **-22.68%** |

*Source QCA calculations and Allconnex subsequent information.*

The Authority's analysis indicates that, as a whole, Allconnex's revenues lie significantly below the Authority's maximum allowable revenue of $765.23 million by around $173.59 million (or 22.68%).

[31] Total costs estimated by Allconnex at the time of price setting were $753.61m.

Water revenues fall below the MAR ($386.47 million) by around $65.81 million, or 17.03%. Wastewater revenues fall below the MAR ($378.76 million) by around $107.78 million or 28.46%.

As a result of this under-recovery, Allconnex's expected return on capital will fall below the weighted average cost of capital – with a return of 5.21% falling below the WACC of 9.35%.[32]

## 2.13 Costs, Revenues and Prices

The reconciliation of costs, revenues and average prices is outlined in Table 60 below.

**Table 60: Costs, Revenues and Prices**

| | *Council 2009/10* | *Allconnex Water 2010/11* | *Allconnex Wastewater 2010/11* | *QCA Water 2010/11* | *QCA Wastewater 2010/11* |
|---|---|---|---|---|---|
| Bulk Water Costs ($m) | 120.20 | 154.66 | | 155.91 | |
| Distribution and Retail Costs ($m) | | | | | |
| Other operating costs | 165.38 | 73.42 | 131.34 | 72.39 | 129.33 |
| + Tax | 15.00 | 5.94 | 9.50 | 3.13 | 4.13 |
| + Return on Capital | 288.56 | 162.40 | 259.88 | 152.29 | 240.03 |
| + Return of Capital | 103.81 | 44.75 | 73.05 | 43.99 | 71.12 |
| **Total Costs ($m)** | **692.95[a]** | **441.17** | **473.77** | **427.71** | **444.61** |
| - Indexation | - | -42.08 | -67.34 | -41.24 | -$65.85 |
| - Capital contributions | - | n/a | n/a | n/a | n/a |
| **Total Costs (MAR)** | **-** | **399.09[b]** | **406.43[b]** | **386.47** | **378.76** |
| **Total Revenues** | **489.42** | **320.66[c]** | **270.98[c]** | | |
| **Over / (Under) recovery** | - | **-78.43** | **-135.45** | **n/a** | **n/a** |

| | *2009/10 Water* | *2009/10 Wastewater* | *Allconnex Water 2010/11* | *Allconnex Wastewater 2010/11* | *QCA Water 2010/11* | *QCA Wastewater 2010/11* |
|---|---|---|---|---|---|---|
| Total Revenues ($m) | 264.82 | 224.60 | 320.66 | 270.98 | 386.47 | 378.76 |
| Volume (ML or connections) | 81,624 | 345,711 | 85,855 | 350,848 | 86,759 | 355,306 |
| **Price ($/kL or $/connection)** | **$3.24/kL** | **$649.68** | **$3.73/kL** | **$772.35** | **$4.45/kL** | **$1,066.02** |

*Notes [a] The Authority has not calculated a MAR for 2009/10 as per its Framework Report (April 2010). [b] Allconnex costs as per their submission to the Authority and subsequent information. [c] Allconnex revenues at the time of price-setting Source QCA calculations and Allconnex subsequent information.*

[32] Expected actual return = (QCA return on capital – under-recovery)/(opening RAB as at 1 July 2010 + half the prudent and efficient capex net of capital contributions). For Allconnex: 5.21% = (392.32 – 173.59)/4,194.85.

## 2.14 Findings

For Allconnex:

(a) average retail water and wastewater prices in 2010/11 increased by 15.1% and 18.9% respectively. These increases fall below those that would achieve full cost recovery in 2010/11 (37.3% and 64.1%), as Allconnex has limited price increases for individual services to 20% to ameliorate customer impacts;

(b) residential bills for households using 200kl of water per year increased by differing amounts depending upon council area, up to a maximum of 20%;

(c) bulk water costs account for 35.1% of Allconnex's proposed total water costs in 2010/11. Retail and distribution operating costs account for 16.6%, return on capital accounts for 36.8%, tax for 1.3% and return of capital 10.1%;

(d) for wastewater, retail and distribution operating costs account for 27.7% of Allconnex's proposed total costs, return on capital accounts for 54.9%, tax for 2.0% and return of capital 15.4%;

(e) the most significant increases in proposed costs in 2010/11[33] relate to a 28.7% increase in bulk water costs, and a 23.8% increase in other operating costs. There is a fall in the return on capital of 27.8% (based on a comparison of councils' interest, dividend payments and retained earnings to the entity's proposed return on capital after taking into account the forecast under-recovery in 2010/11 of total costs).

The Authority's estimate of the costs of supply in 2010/11 is 5.2% lower than Allconnex's. The Authority has a lower return on and of capital (due to a lower WACC and capital savings) and a lower tax allowance. In this regard:

(a) Allconnex's forecast water revenues of $320.7 million fall well below the MAR of $386.5 million calculated by the Authority;

(b) Allconnex's forecast wastewater revenues of $271.0 million fall well below the MAR of $378.8 million calculated by the Authority; and

(c) as a whole, Allconnex's revenues of $591.6 million fall well below the MAR of $765.2 million calculated by the Authority.

[33] As previously noted, the Authority has not reviewed costs for 2009/10.

# 3. UNITYWATER

## 3.1 Ministerial Direction

Under the Ministerial Direction, the Authority must inform customers of the costs and other factors underlying the annual increase in water and wastewater prices, and distinguish the bulk and distribution/retail components to the extent that it is possible given the availability and reliability of relevant information (**Appendix A**).

The Authority must also monitor the revenues of Unitywater's water and wastewater activities against the maximum allowable revenue (MAR) determined by the Authority based on prudent and efficient capital and reasonable operating costs. Further, the Authority must advise the entities by 1 March 2011 and 1 March 2012 of the WACC benchmark it will consider in 2011/12 and 2012/13 respectively.

## 3.2 Background

Unitywater provide water and wastewater services to commercial customers and an estimated residential population of over 700,000 in the Moreton Bay and Sunshine Coast.

Key characteristics of Unitywater's service and asset base appear in Table 1 below.

**Table 1: Unitywater Service and Asset Base**

| | ***Moreton Bay*** | ***Sunshine Coast*** | ***Total*** |
|---|---|---|---|
| Population | 376,949 | 339,663 | 716,612 |
| Residential Water Connections | 118,852 | 119,161 | 238,013 |
| Non-Residential Water Connections | 25,744 | 24,567 | 50,311 |
| Water reservoirs | 35 | 71 | 106 |
| Water supply network (km) | 2,901 | 2,273 | 5,174 |
| Wastewater network (km) | 2,643 | 2,302 | 4,945 |
| Wastewater treatment plants | 8 | 10 | 18 |

*Source Unitywater (2010)*

A map showing the area serviced by Unitywater is shown in Figure 1 below.

**Figure 1 Unitywater Service Area**


*Source Unitywater (2010)*

## 3.3 Prices

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

As noted previously, the Authority has not sought to review prices (or tariff structures) in detail in this first review but, for broad comparative purposes, notes the changes in average prices and residential bills. Average prices provide, at best, a broad overview of price changes.

*Average Prices*

Unitywater's average water and wastewater prices increased across all customer groups in 2010/11. For reasons identified further below, the average price charged by Unitywater differs from that implied by the Authority's analysis. Charts 1 and 2, and Table 2 refer.

As noted previously, prices are not necessarily set by the entities on the basis of costs alone. Indeed, the Authority's previous monitoring of councils' prices indicated that councils did not always base prices on costs in previous years.

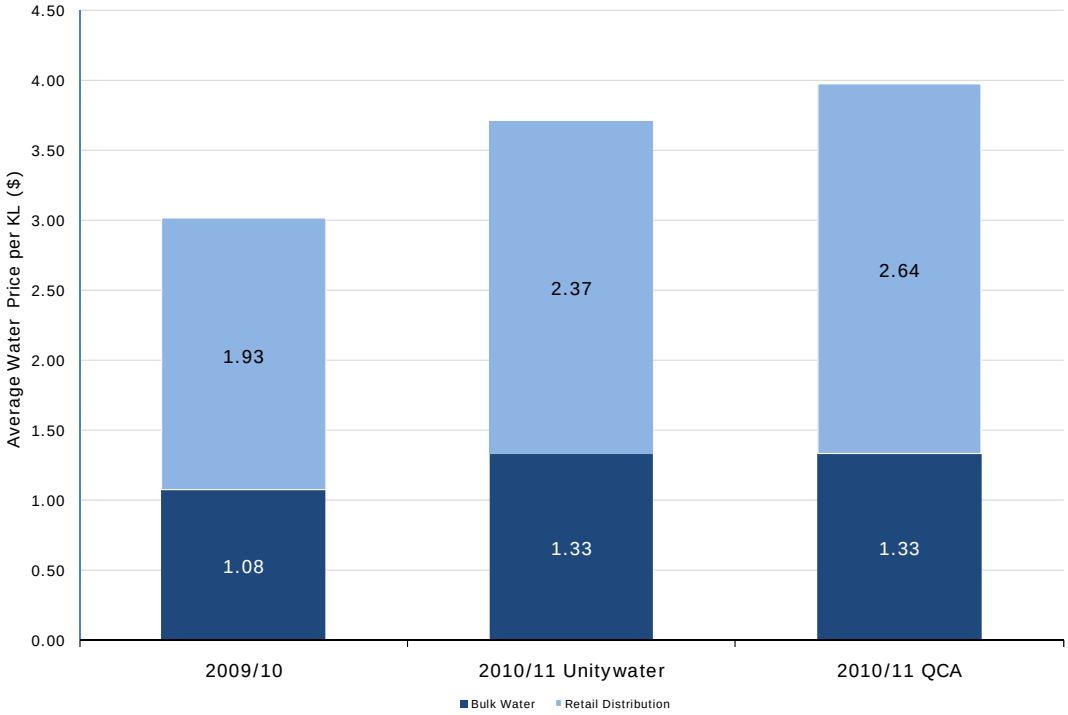
Also indicated are the share of average prices accounted for by bulk water charges (it is assumed that, based on the Government's policy, bulk water prices are passed through to customers in full). There is no bulk component of wastewater prices.

Average prices have been calculated by dividing total revenues by volumes – per kL (for water) and per connection (for wastewater).[34] Unitywater's average price reflects its decision to not fully recover its costs in 2010/11. Unitywater has indicated that it will recover costs in future years (a time period is yet to be determined).

The Authority's average price does not indicate its view of the appropriate level of any particular price. It merely indicates the average price synonymous with full cost recovery in 2010/11.

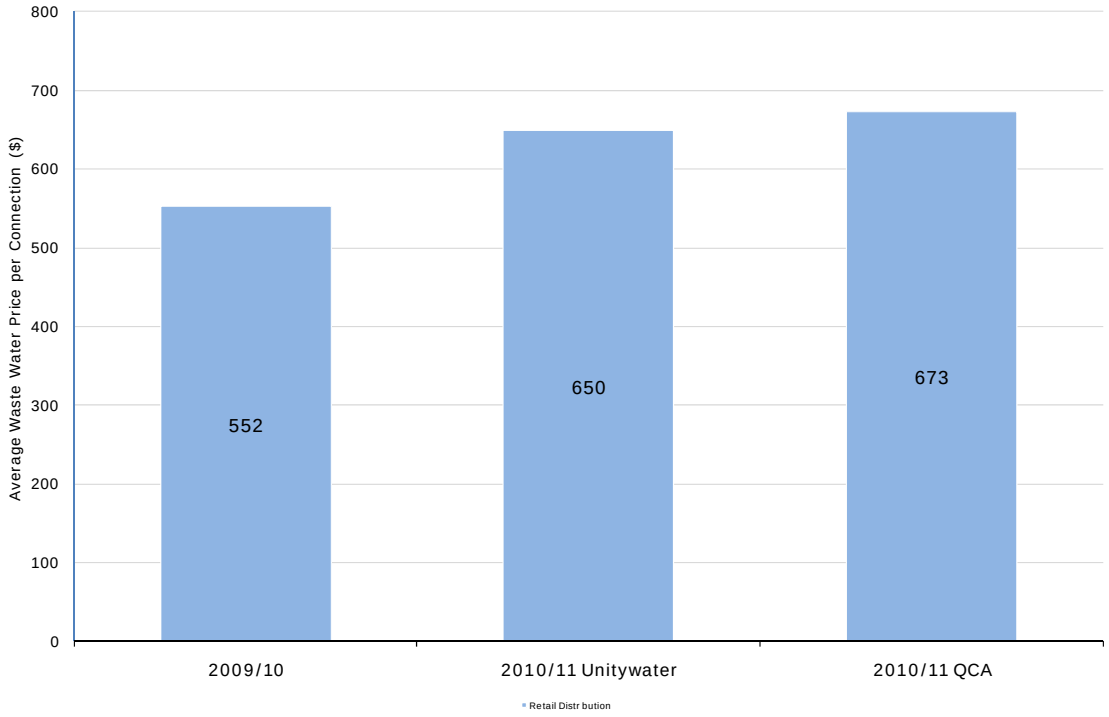
[34] The ABS adopts a similar approach to calculate an average water price in national water accounts – the ABS average price is derived by dividing a state's total residential water revenue ($) by residential water consumption (kL) (ABS, 2010).

**Chart 1: Average Water Prices**




*Source Unitywater (2010), QCA calculations (see section 3.13)*

**Chart 2: Average Wastewater Prices**




*Source Unitywater (2010), QCA calculations (see section 3.13)*

**Table 2: Average Prices [ab]**

| | *2009/10* | *Unitywater 2010/11* | *QCA 2010/11* |
|---|---|---|---|
| Water ($/kL) | 3.01 | 3.70 | 3.98 |
| % increase compared to 2009/10 | | 23.01% | 32.01% |
| Wastewater ($/connection) | 552.40 | 649.89 | 672.85 |
| % increase compared to 2009/10 | | 17.65% | 21.80% |

*[a] Average water price = Annual water revenue ($) / total kL sold . [b] Average wastewater price = Annual wastewater revenue ($) / total connections. Average QCA price = QCA MAR / QCA kL(water) or connections (wastewater)*

As evident from the above table, the Authority's analysis suggests a slightly higher average annual water prices of $3.98/kL could be justified on the basis of costs alone for water. For wastewater, average prices also appear moderately lower than implied by the Authority's assessment of costs.

The Authority's average price is based on 2010/11 costs alone (the Authority's MAR). The Authority's average price for 2010/11 reflects full costs estimated on an annual basis. Ideally, prices should be set, and smoothed, over a longer period to avoid large annual variations.[35]

The Authority acknowledges the submission received from the Moreton Bay Regional Council which calls for a 'consolidated price' across Unitywater's service area. As stated earlier, the Authority has not sought to review tariffs and prices in detail in this first review.

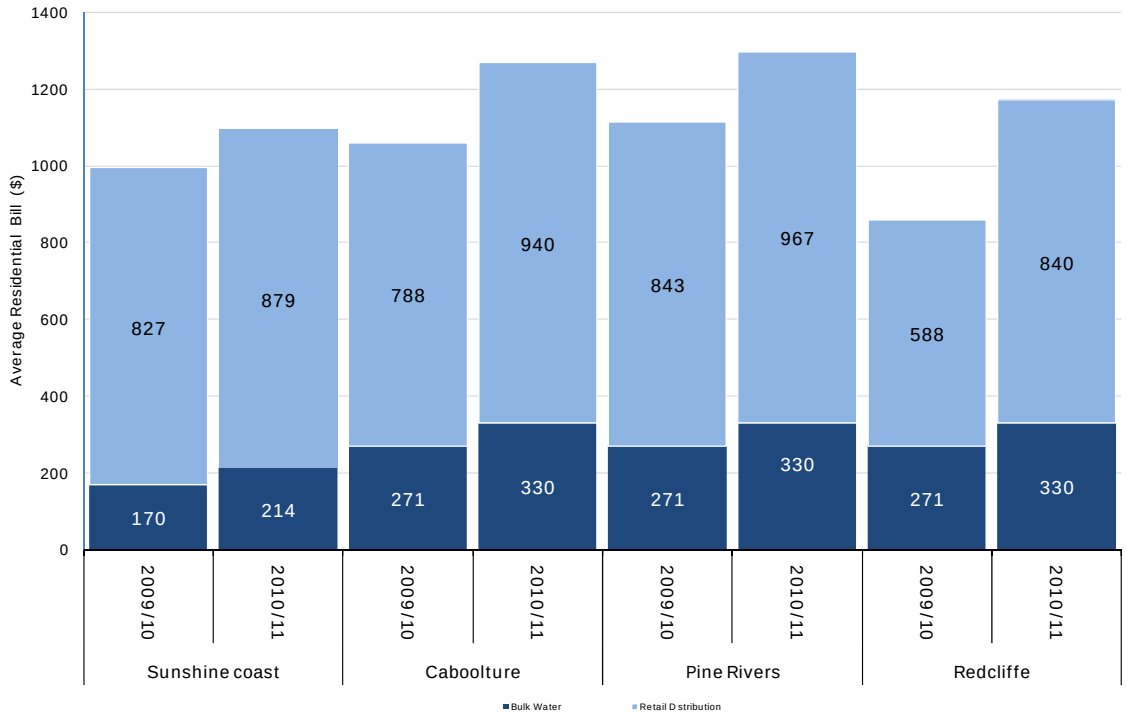
*Residential Bills*

Total residential bills for household water and wastewater services increased in all council areas within Unitywater's jurisdiction between 2009/10 and 2010/11 (Chart 3). Bill increases ranged from $96 in the Sunshine Coast to $311 in Redcliffe (after taking into account the subsidy provided by the Moreton Bay Regional Council).

The residential bills used in the Authority's analysis have been 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 has been based on the approach adopted in each council area.

[35] See the Authority Final Report *SEQ Interim Price Monitoring Framework* (April 2010).

**Chart 3: Total Residential Bills**




*Notes Based on metered usage of 200kL per annum and one pedestal. The retail/distribution component includes water and wastewater. The analysis did not take into account pensioner rebates.*

Bulk water accounts for a smaller proportion of residential bills than for average water prices as the residential bill includes water and wastewater, and wastewater has no bulk water component.

The Authority did not calculate a residential bill consistent with Authority estimates of efficient costs in 2010/11, as the Authority's assessment of costs in this review period has only been able to be undertaken on an aggregate basis, rather than by customer group as there is no alignment of costs with individual tariffs.

## 3.4 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. Details of those standards are addressed further below.

Estimates of demand for water and wastewater have a direct impact on the prudency and efficiency of operating and capital expenditure.

*Unitywater's submission*

Unitywater cited considerable information constraints which affected demand forecasts from 2010 through to 2014. Unitywater noted that the original budget was made prior to taking possession of council assets with only limited historic information upon which to base

projections. Unitywater stated that demand forecasts represent Unitywater's best estimates at the time of budget preparation.

Unitywater also stated that there was uncertainty with these forecasts because of climate conditions and more significantly, from shifting community attitudes towards water. Unitywater noted that forecasting over the next one to three years will be difficult as the Moreton community exit a regime of severe restrictions to milder, permanent conservation measures, whilst Sunshine Coast face the introduction of permanent water conservation measures in the regions.

Unitywater stated that it would revise and improve its demand forecasts over the price monitoring period, as the business gains more operational experience and information and as demand becomes clearer under revised restriction and permanent conservation arrangements.

*Authority's Analysis*

The Authority engaged Frontier Economics (Frontier) to review the appropriateness of Unitywater's demand forecasts for water and wastewater activities from 1 July 2010. Frontier was required to determine whether the demand forecasts have been developed using appropriate forecasting methodologies and reflect reasonable data assumptions.

General Approach

Frontier reviewed the key drivers of demand which include population growth, dwelling demographics, dwelling growth, temperature, rainfall, prices and pricing structures.

Frontier considered that the relevance of each driver should be determined using a progressive selection process that takes into account the statistical significance of each variable.

Data Adequacy

The Authority requested data on past and forecast demand by deemed category in its information requirement for 2010/11. In particular, the Authority requested that a demand forecast for each tariff or tariff component be provided.

In undertaking its review, Frontier noted that SEQ water has recently undergone significant structural reform and, while such reform is expected to ultimately benefit water users, relevant historical data is not always available or has not been transferred from councils to the entities, making forecasting difficult.

Frontier noted that Unitywater was unable to provide any historical data or forecasts of demand for each tariff component as it was unable to obtain this historical data from the councils.

The Authority considers that it would be prudent for Unitywater to collect data on the demand corresponding to each component of prices, as this data is generated at any rate for billing purposes and would form a useful basis for future forecasts – and particularly when tariff structures are to be reviewed. This data will be expected in future years.

Further to this, Frontier noted that an independent review of demand for regulatory purposes typically requires a written description of the forecasting method, including the key issues addressed and assumptions adopted. Consistency between the demand estimates used for forecasting revenue and for capital planning should be documented, with any differences between the two approaches and values explained and made transparent.

Frontier stated that Unitywater's long term forecasting for planning is influenced by a number of factors including security, quality of supply and pressure. Frontier further noted that

Unitywater adopts a number of different assumptions between short-term demand forecasting and long-term demand forecasting, the most important being that it assumes a higher per person per day consumption level for long-term forecasting than it does for short-term forecasting. Frontier noted that long term volume forecasts for residential water demand are based on the infrastructure planning assumption of 230 L/p/day in the SEQ Water Strategy.

**The Authority considers that Unitywater should document the method and approach undertaken in preparing its demand forecasts. Any differences between the forecasting approaches used for pricing and capital planning should be clearly identified and explained.**

Residential Connections

Given the majority of Unitywater's revenue derives from residential usage, Frontier first assessed residential connections and growth, and then corresponding volumes.

Frontier used the growth in private dwellings from the PIFU's May 2010 forecasts to review residential connections. Frontier noted that PIFU lies within the Queensland Government's Office of Economic and Statistical Research (OESR) and that this unit provides transparent and rigorous analysis of population dynamics and forecasts based on statistical analysis to clients at all levels of government and in the private sector. PIFU provides the Government's official population forecasts.

Frontier noted that alternative (or complementary) forecasts could include those based on:

(a) historical data from the QWC (2008-2010). However, Frontier noted that this data is not consistent over time due to significant local council restructuring that occurred in 2008. In addition, the data is unaudited billing data and, as a result, may contain errors relating to billing and meter reading. As a result, while Frontier considered this historical data a relevant point of comparison with Unitywater's forecasts, Frontier preferred PIFU's forward-looking forecasts;

(b) the SEQ Regional Plan 2009-2031 (the Plan) which provides dwelling projections from 2006 to 2031. However, the Plan's projections are a policy target rather than an actual forecast, and are more aggregated than PIFU's. Therefore, Frontier preferred PIFU estimates;

(c) the WGM. The South East Queensland Market Rules require the WGM to issue grid instructions to bulk suppliers that specify the volume of water to be made available at each bulk supply point. Under the system operating plan made under the Water Act 2000, grid instructions must be based on an approved operating strategy, which must detail how the WGM intends to supply water to meet the forecast demands of each of its customers. The operating strategy was not available at the time of the Authority's assessment.

**The Authority accepts that PIFU growth rates are the most reliable independent estimates of connections growth currently available.**

Residential Connections – Unitywater Estimates

Table 3 outlines the estimate of residential water connections provided by Unitywater.

**Table 3: Unitywater Water Connections – residential**

| | ***2010/2011*** | ***2011/2012*** | ***2012/2013*** |
|---|---|---|---|
| Moreton Bay | 118,852 | 121,705 | 124,626 |
| Sunshine Coast | 119,161 | 121,544 | 123,975 |
| **Unitywater** | **238,013** | **243,249** | **248,601** |

*Source Unitywater (2010) data template*

Frontier compared Unitywater's growth in residential connections with PIFU 2010 dwellings growth and historical trends based on council data from the QWC. Table 4 refers. Frontier considered that Unitywater had forecast relatively low growth in connections over 2011-13 compared to estimates by PIFU.

**Table 4: Unitywater annual residential growth rates (%)[36]**

| | ***QWC 2008-10 Connections*** | ***Unitywater 2011-13 Connections*** | ***PIFU 2006-16 Dwellings*** |
|---|---|---|---|
| Moreton Bay | 2.3 | 2.4 | 2.8 |
| Sunshine Coast | 10.7 | 2.0 | 2.7 |

*Source QWC historical data, Unitywater (2010) data template, PIFU (2010)*

In the absence of historical data provided by Unitywater, Frontier recommended that growth rates based on PIFU forecasts of household connections are adopted (Table 5). Frontier noted that while these forecasts differ from the QWC historical trend data, Frontier was mindful that the historical trend was based on a relatively short time period of two years and may be less reliable given structural changes in local government areas.

In response to Frontier, Unitywater stated that it was somewhat preliminary to discount its existing methodology in preference for the PIFU growth rates and that further research should first be undertaken. However, as Unitywater was unable to provide any information about its existing method in deriving growth figures, Frontier was unable to assess Unitywater's approach.

The Authority has accepted Frontier's approach and estimates in its review of capital and operating expenditure. As there was no historical data for 2010/11, Frontier could only review 2011/12 and 2012/13 forecasts (see Table 5).

[36] Growth rates are the annual average compound rates.

**Table 5: Unitywater Water Connections (Amended) - residential**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Moreton Bay | 118,852 | 122,235 | 125,714 |
| Sunshine Coast | 119,162 | 122,371 | 125,669 |
| Unitywater (Frontier) | 238,013 | 244,607 | 251,383 |
| Unitywater (Unitywater) | 238,013 | 243,249 | 248,601 |
| **Difference** | **0** | **1,358** | **2,782** |

*Source Frontier 2010*

**The Authority considers that residential connections for water should be based on PIFU forecasts.**

Water Volumes

Frontier noted that Unitywater had proposed the same growth rates for volumes across customer groups, but not across the two billing areas (see Table 6). Forecast total residential water demand is derived from average residential water usage per person per day, residential occupancy rates and connections (see Table 7).

**Table 6: Unitywater assumptions regarding per person per day consumption (Litres)**

| | *2008/2009* | *2009/2010* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Moreton Bay | - | - | 166 | 166 | 176 |
| Sunshine Coast | - | - | 211 | 208 | 204 |

*Source Unitywater (2010), Frontier (2010). Note No historical data provided by Unitywater.*

**Table 7: Unitywater Residential Water Demand (ML/year)**

| | *2008/2009* | *2009/2010* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Moreton Bay | - | - | 18,077 | 18,246 | 19,807 |
| Sunshine Coast | - | - | 19,432 | 19,660 | 19,767 |
| **Unitywater** | - | - | **37,509** | **37,906** | **39,574** |

*Note Residential water demand (ML/year) = litres per person per day x residential occupancy rate x number of connections x 365 / 1,000,000.*
*Source Unitywater (2010)*

The Authority notes that the assumptions regarding daily residential usage differ from the Target 200 (L/p/day) and the infrastructure planning assumption of 230 L/p/day in the SEQ Water Strategy.

The QWC has advised that the SEQ Water Strategy assumptions are macro level regional forecasts designed to inform long term planning decisions and are not relevant to pricing

decisions made by individual distributor-retailers. QWC advised that it is questionable whether there is any correlation between these macro demand forecasts and hydrological assessments and localised demand forecasts developed by retailers. QWC further advised that localised demand forecasts would be more relevant in assessing the impact of demand on the water distribution and sewerage networks.

Frontier noted that average SEQ water consumption in 2010 has been below 200 L/p/day. Frontier was unable to comment on the appropriateness of the assumed average use per person per day in 2010/11 given the lack of historical data provided by councils to the entities.

The Authority notes that QWC subsequently provided 2009/10 data showing average residential use of 185 L/p/day across Unitywater's service area. The Authority notes that this figure is broadly consistent with Unitywater's assumptions as presented in Table 6 as it lies within the range of 166 L/p/day to 211 L/p/day.

Frontier noted that the rate at which customers respond to permanent water restrictions given the structural efficiencies now in place will be a key factor in water demand over the period.

Frontier expected to see a 'bounceback' for Moreton Bay as the region was previously subject to water restrictions. However, Frontier expected to see a decline for the Sunshine Coast because the region had not previously been subjected to water restrictions, but, as of December 2009, has had to abide by permanent water conservation measures. In further discussions with Frontier, Unitywater indicated that the consumption profile for Moreton Bay was based on the assumption that the drought would break in 2013 and there would be a 'bounceback' in consumption.

To more accurately reflect the timing of the 'bounceback', Frontier recommended revising Moreton Bay's residential L/p/day assumptions upwards in 2011/12 to reflect that SEQ is no longer in drought.

Frontier also noted that Unitywater had not applied price elasticity of demand estimates to volume forecasts. Frontier considered that elasticity estimates were relevant to Unitywater, as discretionary use will increase as restrictions remain relatively relaxed. As a result, customers will be more responsive to price increases, although the absolute price elasticity will remain quite low. Based on a number of studies of urban water use, Frontier noted a range of potential elasticity estimates from 0.05 to 0.51.[37]

However, Frontier noted that Unitywater's prices in 2011/12 and 2012/13 do not represent actual price paths and it is methodologically unsound to apply price elasticity estimates in the absence of actual proposed prices. The Authority notes the wide range of estimates for elasticity, and considers that an estimate relevant to SEQ should be developed by entities for projections of demand.

In response to Frontier, Unitywater noted that the prevalence of tourism in coastal areas made comparisons across regions problematic and that price elasticity is dampened by tourism as tourists are inelastic to water price signals. Unitywater also noted that price elasticity is only applicable to discretionary residential usage not base flow usage per capita.

In view of the above considerations, Frontier recommended Unitywater's forecast residential volumes only be amended to reflect the amended growth rates for connections and revised assumptions reflecting that the drought ended prior to that initially forecast. The amendments are shown in Table 8 below.

[37] A price elasticity of 0.05 means that for every 1% increase in price, demand falls by 0.05%.

**Table 8: Unitywater Residential Water Demand (Amended) (ML/year)**

| | *2008/2009* | *2009/2010* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Moreton Bay | - | - | 18,077 | 19,430 | 19,980 |
| Sunshine Coast | - | - | 19,432 | 19,794 | 20,037 |
| Unitywater (Frontier) | - | - | 37,509 | 39,224 | 40,017 |
| Unitywater (Unitywater) | - | - | 37,509 | 37,906 | 39,574 |
| **Difference** | - | - | **Nil** | **1318** | **443** |

*Source Frontier (2010)*

The Authority accepts Frontier's recommendations for 2010/11. The Authority also considers that the tariff structure will be a significant determinant of demand. No changes in tariff structure were made in 2010/11 pending the development of approved pricing principles.

The Authority notes that Unitywater's estimates of residential water volumes are broadly confirmed by Frontier's analysis, with Frontier increasing volumes by 3.5% in 2011/12 and only 1.1% in 2012/13. The Authority considers that Frontier's approach represents the best available estimate of demand and therefore has accepted Frontier's estimates in its review of capital and operating expenditure.

**The Authority accepts Frontier's residential water demand estimates.**

Wastewater

Unitywater's estimates of residential wastewater connections are shown in Table 9 below.

**Table 9: Unitywater Wastewater Connections – residential**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Moreton Bay | 118,387 | 121,228 | 124,137 |
| Sunshine Coast | 124,629 | 127,121 | 129,664 |
| **Unitywater** | **243,016** | **248,349** | **253,801** |

*Source Unitywater (2010)*

In line with the approach used in its analysis of residential water usage, Frontier adjusted residential wastewater connection forecasts in 2010/11 to reflect the PIFU growth forecasts used with water connections (Table 10).

Frontier noted that residential and commercial wastewater volumes were not provided as the associated charges are not volumetrically based.

Frontier's adjustments result in an increase in wastewater connections of 0.6% for 2011/12 and 1.1% in 2012/13. Frontier recommended that 2010/11 connection numbers remain unchanged.

**Table 10: Unitywater wastewater connections Amended – residential**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Moreton Bay | 118,387 | 121,756 | 125,222 |
| Sunshine Coast | 124,629 | 127,987 | 131,435 |
| Unitywater (Frontier) | 243,016 | 249,743 | 256,657 |
| Unitywater (Unitywater) | 243,016 | 248,349 | 253,801 |
| **Difference** | **-** | **1,394** | **2,856** |

*Source Frontier (2010)*

**The Authority accepts Frontier's residential wastewater demand estimates.**

Non-residential and Trade waste

Frontier noted that Unitywater applied residential growth rates to both non-residential water and wastewater customers. In the absence of more robust information, Frontier adopted the same approach as Unitywater, as Frontier had no basis upon which to make an amendment.

Frontier noted that Unitywater did not provide trade waste data. Frontier recommended that Unitywater collect volumetric trade waste data.

Recycled Water

Frontier noted that Unitywater did not provide data on recycled water volumes.

In the absence of historical data or alternative sources of data, Frontier is unable to provide alternative forecasts to those proposed by Unitywater.

**The Authority accepts Unitywater's forecasts but requires Unitywater to develop more specific short-term forecasts for trade waste customers and recycled water for future years.**

Summary

Demand estimates are an essential component of economic regulation. 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 the structural change in the SEQ water sector has led to a number of legacy issues, particularly regarding the transfer of data from councils. This was evident as Unitywater were not able to provide historic demand data for councils.

The Authority has adjusted Unitywater's residential connections for water and wastewater and residential volumes to reflect PIFU forecasts. Nonetheless, the Authority notes that these (revised) estimates broadly confirm Unitywater's estimates for 2010/11.

The Authority considers that, prior to the next price monitoring period, Unitywater should document its approach to forecasting demand for all purposes, and establish procedures and protocols for the collection and collation of data, including:

(a) connections for residential and non residential water users;

(b) connections for wastewater customers (residential, non-residential, recycled water customers and trade waste customers); and

(c) volumetric consumption for residential and non-residential customers for potable water, recycled water and trade waste.

The Authority also considers that Unitywater should also take into account the response of consumers to increasing prices (that is, estimate the elasticity of demand) when estimating future consumption.

## 3.5 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 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.

The Authority engaged SKM to review the method used by the entities to apportion the advised RAB to each deemed category and its implementation.

*Unitywater's Submission*

Unitywater has apportioned its initial RAB of $2.03 billion to each deemed category (see Table 11). Unitywater has used the pro rata approach under which the advised RAB is apportioned to existing asset values on the basis of their written down values.

**Table 11: Unitywater RAB as at 1 July 2008 ($m)**

| | ***Water*** | ***Wastewater*** | ***RAB*** |
|---|---|---|---|
| Moreton Bay Regional Council | 481.07 | 628.43 | 1,109.50 |
| Sunshine Coast Regional Council | 368.24 | 551.46 | 919.70 |
| **Unitywater** | **849.31** | **1, 179.89** | **2,029.20** |

*Stakeholder Submissions*

Dr R. Koerner made a number of submissions to the Authority. In summary, Dr. Koerner contended that there were deficiencies in the methodology used to determine the written down replacement values of Maroochy Water Services' non-current distribution assets. In particular, Dr Koerner argues that asset values were excessively inflated following roll-forward between 2006/07 and 2007/08.

Dr Koerner argues that these values have then been carried forward into the written down replacement values of Sunshine Coast Water, in turn, influencing KPMG's recommendation for Unitywater's RAB which was calculated using a discounted cash flow methodology. Public

submissions along similar lines were received from Ms A. West, Mr B. Raison and Ms S. Adams. Ms West, Mr Raison and Ms Adams argued that the methodology used to value non-current assets was not subject to effective prices oversight and is inconsistent with National Water Initiative Pricing Principles for the recovery of capital expenditure.

*Authority Analysis*

SKM noted that the total RAB value in Unitywater's submission reconciles with the Ministerially advised RAB.

However, both Unitywater and SKM identified a number of asset-related and other information gaps in Unitywater's submission. In particular, not all audited financial statements were available at the time of SKM's review. These information gaps reflect data shortcomings arising from the transition from the councils. SKM stated, therefore, that the accuracy of the apportionment of Unitywater's initial RAB to existing assets cannot be verified.

In response to the other public submissions, the Authority notes that these issues relate to the establishment of the initial regulated asset base as determined by the Minister. The Authority's Ministerial direction stipulates that "council distribution/retail asset valuations, establishing the initial regulated asset base at 1 July 2008, are as advised by the Minister for Natural Resources, Mines and Energy and Minister for Trade". The Authority must accept the initial regulated asset base as determined by the Minister.

**The Authority considers that due to information gaps, the accuracy of apportionment of Unitywater's initial RAB cannot be verified at this stage.**

## 3.6 Capital Expenditure

*Capital Expenditure from 1 July 2008 to 30 June 2010*

The Direction requires the Authority to accept as prudent and efficient, actual capital expenditure (excluding establishment costs) as included in council's financial accounts from 1 July 2008 to 30 June 2010; allowable establishment costs as advised by the Minister for Natural Resources, Mines and Energy and the Minister for Trade; and 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 stated that capital expenditure for 2008/09 was $81 million and $261 million in 2009/10.

Unitywater stated that capital expenditure for 2008/09 was based on actual capital expenditure. In this case the data had been audited. Audited actual capital expenditure figures were unavailable for 2009/2010 at the time Unitywater were preparing its submission. As a result, Unitywater have forecast capital expenditure for financial year 2010 based on third quarter budget estimates. These information gaps reflect data shortcomings arising from the transition from the councils.

Unitywater noted that the costs associated with the establishment of the distributor-retailer authorities under the water reform models are to be carried forward as part of the RAB provided they meet eligible purpose criteria and verification requirements. Unitywater did not include establishment costs in its submission to the Authority as these are not yet finalised. Unitywater noted that establishment costs will be integrated into the final RAB for 1 July 2010.

Unitywater identified data problems which made it difficult to correctly classify historical capital expenditure into an asset type and cost driver category (e.g. growth, compliance, renewals etc). Unitywater expect that this issue will be rectified when audited actual data is received..

Authority's Analysis

SKM were asked to compare actual capital costs for 2008/09 and 2009/10 to council's financial accounts provided by Unitywater.

The Authority notes that 2009/10 capital expenditure cannot be verified against councils' financial accounts as supporting information based on audited accounts is yet to be provided by the entities.

Further, allowable establishment costs have not been advised by the Minister for Natural Resources, Mines and Energy and Minister for Trade.

The Authority notes that Unitywater excluded contributed, donated and gifted assets (contributed assets) from its total capital expenditure figures for 2008/09 and 2009/10. Unitywater's total capital expenditure should include contributed assets and those funded by cash contributions (see Table 12).[38] The Authority has adjusted Unitywater's estimates for this purpose.

**Table 12: Unitywater adjusted 2008/09 and 2009/10 capital expenditure ($ m)**

| | ***2008/09*** | ***2009/10*** |
|---|---|---|
| Capital expenditure (Unitywater) | 81.4 | 260.5 |
| Capital expenditure (Unitywater + contributed assets) | 129.9 | 292.4 |
| **Difference** | **48.5** | **32.0** |

*Source Unitywater (2010) and QCA calculations.*

The Authority will review Unitywater's past capital expenditure once audited information is available and establishment costs have been finalised by the Minister. As a result of these information gaps, the initial RAB as at 1 July 2010 should be viewed as an interim RAB.

**The Authority will review past capital expenditure claimed by Unitywater once audited information is available and establishment costs have been approved by the Minister.**

*Capital Expenditure from 1 July 2010*

The Ministerial Direction also 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 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.

[38] Total capital expenditure should include contributed assets and those funded by cash contributions regardless of the approach adopted to their treatment which is dealt with separately below.

*Unitywater's submission*

In its submission, Unitywater proposed a capital works program (excluding contributed assets) of approximately $698 million over 3 years of which water accounts for approximately $130 million and wastewater accounts for approximately $568 million.[39]

Unitywater has presented its forecast capital expenditure figures on an estimated commissioned basis. Unitywater assumed that capital expenditure incurred during a financial year will represent 65% completion of each asset project by year end. The assumption is based on historic trends of the two councils.

On this basis, Unitywater's forecast of $257 million of capital expenditure to be commissioned in 2010/11 is derived from $396 million of capital expenditure to be incurred in 2010/11.

(a) Proposed Capital Expenditure

Unitywater assigned the increase in capital works to the following cost drivers: growth, renewal, improvement and compliance (see Table 13).

**Table 13: Forecast Capital Expenditure Water and Wastewater ($m)**

| | ***2010/11*** | ***2011/12*** | ***2012/13*** | ***Total*** |
|---|---|---|---|---|
| Growth | 148.1 | 164.7 | 159.5 | 472.3 |
| Renewal | 24.2 | 29.7 | 23.7 | 77.6 |
| Improvement | 75.0 | 23.8 | 9.9 | 108.7 |
| Compliance | 9.8 | 18.8 | 10.7 | 39.3 |
| **Total** | **257.1** | **237.0** | **203.9** | **698.0** |
| **Comprising** | | | | |
| **Water** | **38.3** | **52.0** | **39.6** | **129.9** |
| **Wastewater** | **218.8** | **185.0** | **164.4** | **568.1** |

*Note Capital expenditure is presented here on an as commissioned' basis. Commissioned assets are able to contribute productive capacity to the system. Unitywater have assumed that 65% of planned capital expenditure will be commissioned in the reporting year. 35% is therefore carried over to the following year. Source Unitywater 2010 data template*

The water and wastewater costs relate to each of Unitywater's two geographic areas as detailed in Tables 14 and 15.

[39] All figures in this section are in nominal terms unless otherwise stated.

**Table 14: Capital Expenditure for Water by Geographic Area ($m)**

| | *2010/11* | *2011/12* | *2012/13* | *Total* |
|---|---|---|---|---|
| Moreton Bay | 19.3 | 20.8 | 13.9 | 54.0 |
| Sunshine Coast | 19.0 | 31.2 | 25.7 | 75.9 |
| **Total** | **38.3** | **52.0** | **39.6** | **129.9** |

*Source Unitywater (2010) data template*

**Table 15: Capital Expenditure for Wastewater by Geographic Area ($m)**

| | *2010/11* | *2011/12* | *2012/13* | *Total* |
|---|---|---|---|---|
| Moreton Bay | 179.3 | 88.5 | 36.6 | 304.3 |
| Sunshine Coast | 39.5 | 96.5 | 127.8 | 263.8 |
| **Total** | **218.8** | **185.0** | **164.4** | **568.1** |

*Source Unitywater (2010) data template*

In its submission, Unitywater noted that the majority of the works across the region will be in wastewater transport and treatment assets.

(b) Service Standards

In its submission, Unitywater indicated that at present, it continues to operate under the service standards developed by the Sunshine Coast and Moreton Bay Regional councils prior to amalgamation.

Unitywater has commenced developing common service standards across its operating area and expects that these service standards will commence from 1 July 2011.

(c) Capital Planning

Unitywater has developed separate capital planning processes for capital expenditure related to each of growth, renewals and compliance. More detail on the capital planning process employed by Unitywater can be found in Unitywater's submission.

Unitywater has also developed a prioritisation model to assess and rank prospective capital projects and programs across the region. Under the model, projects are assessed against the following weighted criteria:

(a) public health;

(b) workplace health and safety;

(c) environmental impacts;

(d) financial considerations;

(e) asset condition;

(f) legislative/legal/corporate requirements; and

(g) social considerations.

Unitywater has also taken measures to improve its governance arrangements for reviewing and delivering its capital expenditure program by establishing a sub-committee of the Board to monitor and review Unitywater's capital expenditure program.

In subsequent information provided to the Authority, Unitywater have advised that it expects to defer approximately $50 million in expenditure in 2010/11. While some of this expenditure may be the result of a project not being required, Unitywater submit that the majority of this expenditure will be a prudent deferral of expenditure based on Unitywater having more detailed information or understanding of the project circumstances arising from their investigations.

*Authority's Analysis*

The Authority engaged SKM to review the adequacy of data provided by Unitywater and the prudency and efficiency of Unitywater's proposed capital expenditure, within the framework outlined in the Authority's *Final Report: SEQ Interim Price Monitoring Framework*. In accordance with this framework, SKM reviewed the cost drivers of the capital expenditure in detail and the need for, scope and standard of the works when assessing the prudency and efficiency of the proposed capital works.

(a) Adequacy of Capital Expenditure Data

As noted previously, Unitywater excluded contributed, donated and gifted assets from its forecast capital expenditure. Total capital expenditure should include contributed, donated and gifted assets and those funded by cash contributions (see Table 16). Therefore, contributed, donated and gifted assets have been added back in to Unitywater's estimates.

**Table 16: Revised Capital Expenditure Profile including contributed assets* ($m)**

| | ***2010/2011*** | ***2011/2012*** | ***2012/13*** | ***Total*** |
|---|---|---|---|---|
| Capex (Unitywater) | 257.1 | 237.0 | 203.9 | 698.0 |
| Capex (Unitywater + contributed assets*) | 287.9 | 262.8 | 230.0 | 780.6 |
| **Difference** | **30.8** | **25.8** | **26.0** | **82.6** |

*Source Unitywater (2010) and QCA calculations. * includes contributed, donated and gifted assets.*

Unitywater has indexed 2010/11 capital costs on the basis of a forecast CPI of 2.48%. The Authority notes SKM's finding that CPI is a conservative index. The Authority acknowledges that there are options for the indexing of asset values ranging from a broad-based inflation index such as CPI to a specific industry input index or combination of input indices.

Industry input indices should provide a more accurate estimate of replacement cost-based asset values and could provide a reasonable substitute for a full revaluation. However, such indices may be subject to significant step changes over short periods, and would be expected to rise and fall in line with market conditions. This could lead to significant price variations within and between regulatory periods.

Until a more appropriate index is established which is particularly relevant to the entities, the Authority considers that Unitywater's use of CPI to index capital expenditure is reasonable and notes that any variations subsequently found between the forecast amount and the actual amount can be taken into account at the next price monitoring review.

A project list has been provided for future capital projects. This is a highly useful and comprehensive tool which links each project to the activity (e.g. water, wastewater) geographical area, project drivers, asset class and timing of expenditure. This single spreadsheet allows for a robust disaggregation of project costs into the Authority's selected categories. The use of Unitywater's spreadsheets allows for a highly disaggregated system of cost recording. SKM recommend the continued use of this model (or similar versions of this model).

(b) Service Standards

The Authority is not reviewing service standards as part of this price monitoring review. The Authority has accepted the service standards provided by the entities so long as they have been approved by other relevant agencies.

As noted above, Unitywater continue to operate under the pre-existing service standards that Moreton Bay and Sunshine Coast councils' operated under. These service standards had previously gained approval from the Department of Environment and Resource Management.

There is however, variation in customer service standards across Unitywater's operational area. SKM noted that this is expected to continue until the release of a water and wastewater customer code which will provide minimum guaranteed service standards for the customers of the three distributor-retailers, under the *South East Queensland Water (Distribution and Retail Restructuring) Act 2009*.

Unitywater has commenced development of common service standards across its service area. Unitywater expects that the common service standard will apply from 1 July 2011 and will be reflected in Unitywater's Netserv Plan.

(c) Capital Planning

SKM undertook a high level review of Unitywater's general policies and procedures for scoping and approving capital expenditure. In particular, SKM compared Unitywater's processes against good industry practice.

SKM concluded that Unitywater's processes and procedures accord with good industry practice. SKM do however, recommend that Unitywater continues to develop its governance structures to better underpin its processes for approving capital expenditure.

(d) Prudency and Efficiency

For capital expenditure to be included in the RAB, expenditure 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).

The Authority notes that Unitywater expect to prudently defer approximately $50 million in capital expenditure in 2010/11.

The Authority supports ongoing review by Unitywater of its capital expenditure program and has included the identified deferrals in its review of capital expenditure.

In assessing the cost efficiency of the sampled projects, SKM used published unit rates from Rawlinsons, available unit rates from SEQ water entities and other water utilities, previous experience on similar projects and quotes from various suppliers. Some of these unit rates are confidential and are therefore not published in this report. Unit rates identified or calculated from the supporting data provided by Unitywater were compared to a range of rates from the above sources. If the rate was within 30% of the benchmark identified for a similar type, length

and diameter or pipe, or similar type of project, SKM considered the expenditure to be cost efficient.

SKM noted that there are a number of factors that can significantly affect project costs including the project location (e.g. highly urbanised areas are significantly more expensive than greenfield sites), material types (e.g. different pipeline materials such as PVC and MICL pipe), the fittings and fixtures required (e.g. many connections and valves versus only a few), and geotechnical conditions (e.g. rock versus sandy soils).

Having regard to the above sources of variation, and the time available for this review, SKM considered that variation above 30% required further detailed evaluation. The Authority notes that contingency allowances can vary from 5 to 40% depending on the stage of a project's planning (Evans and Peck, 2009).

The Authority accepts SKM's approach for this first review but notes that it will be seeking to refine this range over the interim period wherever possible. The Authority also notes that, in previous reviews of infrastructure charges, 25% was recommended to the Authority by another consultant.

A sample of 13 projects was selected for the detailed review of prudency and efficiency. Ten of these projects were selected as they are the highest cost water and wastewater projects for each geographic area. In addition a median value project was selected for each geographic area to allow greater representation of the lower value projects, which are less likely to have been reviewed in detail in the past. An additional program, the 'Heavy Vehicle Fleet Replacement program' was also selected due to the magnitude of the proposed costs.

The sample captured in excess of 10% of capital expenditure by value in each activity and geographic area over the forecast period and includes two lower value projects. The sample also captures 33% of total capital expenditure over the three year interim period, however only 11% of total capital expenditure in 2010/11 was captured. SKM considered that the sample size chosen was reasonably representative of Unitywater's capital works program.

The list of capital expenditure programs reviewed in detail is shown in Table 17.

**Table 17: Capital expenditure programs reviewed ($m)**

| *Project* | *Activity* | *2010/11* | *Total 2010/11-2012/13* |
|---|---|---|---|
| Nambour STP | Wastewater Treatment | 0 | 52.7 |
| South Caboolture Wastewater Treatment Plant Upgrade and Augmentation (Stage 2) | Wastewater Treatment | 38.1 | 42.5 |
| Noosa STP | Wastewater Treatment | 13.7 | 37.1 |
| Kawana STP | Wastewater Treatment | 0 | 31.5 |
| Burpengary Wastewater Treatment Plant Stage 2 Augmentation | Wastewater Treatment | 22.4 | 22.4 |
| Moreton Bay Water/Sunshine Coast Water - Heavy Vehicle Fleet Replacement | Other | 6.2 | 9.5 |
| 600mm water main - P001 | Water Transport | 0.2 | 7.6 |
| Water Meter Replacement- 20mm Meters | Water Metering | 1.6 | 5.1 |
| Water Supply Service Reservoir, Boundary Road Reservoir No 3 (24ML) | Water Storage | 0.5 | 5.0 |
| Water Supply Facilities - Switchboard Replacement Program | Water Project | 0.7 | 4.7 |
| Water Main WM-NLC (500mm x 2800m) Off take and supply main from Northern Interconnected Pipeline. | Water Transport | 2.0 | 4.3 |
| WPS Pump Replacement | Water | 0.08 | 0.2 |
| Water Main Hakae Ct / Areca Ct, Narangba (150mm x 114m) | Water | 0 | 0.1 |

*Source Unitywater supporting information.*

SKM found that most, but not all, of Unitywater's forecast expenditure in 2010/11 was prudent and efficient. For much of the expenditure in 2011/12 and 2012/13, insufficient data (and the early stage of planning) meant that the consultants were unable to come to a conclusion on prudency and efficiency. The consultant's conclusions and the Authority's response with respect to the prudency and efficiency of the proposed capital expenditure programs is detailed below on a project by project basis.

(i) Nambour Sewage Treatment Plant

Unitywater proposed capital expenditure of approximately $53 million over the interim period to upgrade the Nambour STP (Table 18).

**Table 18: Nambour Sewage Treatment Plant ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Nambour Sewage Treatment Plant | 0 | 19.5 | 33.2 | 52.7 |

*Source SKM (2010)*

Unitywater claimed that the Nambour STP is operating at or close to capacity and occasionally operating in breach of its current licence with respect to discharge standards. SKM confirmed that the proposed upgrade is required to service growth and improve compliance with discharge standards. SKM found that overall, the project appears to be efficient and that the costs for the works appear to be consistent with prevailing market conditions.

SKM were of the view that the project could be delivered in the timeframe specified by Unitywater.

SKM found the proposed capital expenditure to be prudent and efficient.

The Authority accepts SKM's findings that the capital expenditure proposed for this project is prudent and efficient.

(ii) South Caboolture Sewage Treatment Plant Upgrade and Augmentation (Stage 2)

Unitywater proposed capital expenditure of approximately $42.5 million over the interim period to upgrade and augment the South Caboolture STP.

Unitywater claimed that the project is required to meet population growth and expected future increases in demand. Once finalised, the works are expected to approximately double the design capacity of the plant. The project expenditure profile is outlined in Table 19 below.

**Table 19: South Caboolture STP Upgrade and Augmentation ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| South Caboolture WWTP Upgrade | 38.1 | 3.9 | 0.4 | 42.5 |

*Source SKM (2010)*

SKM confirmed that the existing plant is approaching its maximum capacity and there is a demonstrated need for the facility to be upgraded to meet expected population growth and load increases. SKM confirmed that the project is efficient, finding that the project costs are reasonable.

SKM found that the project is well advanced and indications are that it would be practicable to construct the plant in 2010-11.

In undertaking its review, SKM noted that Unitywater did not provide supporting documentation in relation to standards for technical, design and construction requirements and the proposed program of works. SKM recommend that Unitywater make this information available and that this information be given further consideration.

SKM found the proposed capital expenditure to be prudent and efficient.

The Authority accepts SKM's finding that the $42.5 million in capital expenditure proposed by Unitywater to upgrade and augment the South Caboolture STP is prudent and efficient.

(iii) Noosa Sewage Treatment Plant Stage 2 Augmentation

In its submission, Unitywater proposed capital expenditure of approximately $37 million over the interim period to augment Noosa's STP. The project is being undertaken to service growth within the catchment as well as to improve water quality in Burgess Creek and to comply with EPA regulations.

The project expenditure profile as proposed by Unitywater in its submission is outlined in Table 20 below.

**Table 20: Proposed expenditure profile - Noosa Sewage Treatment Plant ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Noosa Sewage Treatment Plant | 13.7 | 23.4 | 0 | 37.1 |

*Source SKM (2010)*

SKM found the proposed capital expenditure to be prudent and efficient for the 2010/11 financial year only at this stage as there is insufficient information to determine whether the project is prudent and efficient beyond 2010/11. For example, the works program and delivery method for this project have not been finalised.

While noting that the availability of information is consistent with the stage of the project, SKM recommend that the project budget for 2011/12 be removed for price monitoring purposes pending a review of additional information such as the works program and delivery method once it becomes available.

SKM confirmed that based on available information, there is a demonstrated need for the project. SKM advise that the proposed project costs appear to be reasonable but there is insufficient information to determine whether the project is efficient in accordance with the Authority's Monitoring Framework.

The Authority accepts SKM's findings that the expenditure proposed for 2010/11 remain in the budget. The Authority will review the budget for 2011/12 and beyond further before making a decision on the prudency and efficiency of these costs (see Table 21).

**Table 21: Revised Expenditure Profile - Noosa Sewage Treatment Plant ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Noosa Sewage Treatment Plant | 13.7 | Requires further review | 0 | 13.7 |

*Source SKM (2010)*

(iv) Kawana Sewage Treatment Plant Upgrade

In its submission, Unitywater proposed capital expenditure of approximately $32 million over the interim period to upgrade the Kawana STP. The project is in its preliminary stages with the final planning report to be finalised late in 2010.

The project expenditure profile as proposed by Unitywater in its submission is outlined in Table 22 below.

**Table 22: Proposed Expenditure Profile - Kawana Sewage Treatment Plant ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Kawana Sewage Treatment Plant | 0 | 11.6 | 19.9 | 31.5 |

*Source SKM (2010)*

SKM advised that it was too early to assess the efficiency of the capital expenditure as the project was still in the pre-planning stage at the time of SKM's review. While noting that the availability of information is consistent with the stage of the project, SKM recommended that the project budget for 2011/12 and 2012/13 be removed for price monitoring purposes pending a review of additional project information once it becomes available.

SKM confirmed that the project is required to service growth in the catchment and to ensure compliance with EPA discharge regulations.

The Authority accepts SKM's findings that the expenditure proposed for 2010/11 remains in the budget The Authority will review the budget for 2011/12 and beyond further before making a decision on the prudency and efficiency of these costs (see Table 23).

**Table 23: Revised Expenditure Profile - Kawana Sewage Treatment Plant ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Kawana Sewage Treatment Plant | 0 | Requires further review | Requires further review | 0 |

(v) Burpengary Sewage Treatment Plant Stage 2 Augmentation

Unitywater proposed capital expenditure of approximately $22.4 million over the interim period to augment the Burpengary STP.

The project is designed to increase the capacity of the plant in order to service expected future growth. Project plans also include provision for an effluent storage reservoir to manage effluent discharge and to ensure compliance with discharge regulations.

The project is largely complete with approximately $37 million in work already completed. The indicated budget is to finalise construction of the asset. The project expenditure profile as proposed by Unitywater in its submission is outlined in Table 24 below.

**Table 24: Burpengary STP Stage 2 Augmentation ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Burpengary STP Stage 2 augmentation | 22.4 | nil | nil | 22.4 |

*Source SKM (2010)*

SKM found the proposed capital expenditure to be generally prudent and efficient. SKM confirmed that there is a need to upgrade the plant to increase capacity in order to meet future growth and to ensure compliance with discharge regulations.

With regards to efficiency, SKM deemed the project to be mostly efficient. Noting that the project is nearly complete, SKM's view is that it would appear to be reasonable to complete the remaining value of works in 2010-11. SKM do note that the cost and construction timeframe have exceeded those that were originally planned and recommend that the design process be reviewed with lessons learnt incorporated into future projects.

The Authority accepts SKM's findings that the capital expenditure proposed for this project is prudent and efficient. The Authority will review this project further in the 2011/12 price monitoring review.

SKM note that a detailed project business case was not provided and, given that the project is almost complete, SKM's view is that this information should be available.

(vi) Heavy Vehicle Fleet Replacement Program

Unitywater propose $10 million in capital expenditure over the interim period to renew its heavy vehicle fleet. The program will renew older vehicles or those vehicles that have had a high level of utilisation relative to the age of the asset. Unitywater is currently gathering information on the condition and performance of its fleet and plant.

The program expenditure profile as proposed by Unitywater in its submission is outlined in Table 25 below.

**Table 25: Proposed Expenditure Profile - Heavy Vehicle Replacement Program ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Unitywater heavy vehicle replacement program | 6.2 | 1.8 | 1.5 | 9.5 |

*Source SKM (2010)*

SKM found a demonstrated need for the project and noted that a logical procedure for determining the budget had been implemented. SKM advise also, that the project costs appear reasonable.

At the time of SKM's review, Unitywater were reviewing its plant and fleet practices. The Authority understands that this review will consider asset ownership, condition and utilisation factors as well as Unitywater's operational requirements. Unitywater advise that this review will then underpin development of a fleet and procurement strategy.

SKM's review has found the proposed capital expenditure to be prudent and efficient for the 2010/11 financial year only at this stage as there is insufficient information to determine whether the project is prudent and efficient beyond 2010/11. Due to a lack of information, SKM recommend that expenditure beyond 2010-11 be reviewed further once more information becomes available.

The Authority accepts SKM's findings and agrees that the expenditure proposed for 2010/11 remain in the budget. The Authority will review the budget for 2011/12 and beyond further once more information becomes available before making a decision on the prudency and efficiency of these costs (see Table 26).

**Table 26: Revised Expenditure Profile - Heavy Vehicle Replacement Program ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Unitywater heavy vehicle replacement program | 6.2 | Requires further review | Requires further review | 6.2 |

*Source SKM (2010)*

(vii) 600mm water main

In its submission, Unitywater proposed capital expenditure of approximately $7.6 million over the 2010/11-2012/13 period to augment a 600mm water main in the Image Flat area. The water main stretches 4,400m from Savilles Rd in the West to Nambour Leagues Club in the East.

The project expenditure profile as proposed by Unitywater in its submission is outlined in Table 27 below.

**Table 27: 600mm Water Main ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| 600mm Watermain – P001 | 0.2 | 0.5 | 7.0 | 7.6 |

*Source SKM (2010)*

SKM confirmed that the water main is required to service population growth. SKM confirm that existing mains located in the vicinity of the proposed augmentation are not capable of meeting the increased demand in this high growth service area. SKM advised that the project is efficient and the costs appear to be reasonable.

SKM found the proposed capital expenditure to be prudent and efficient.

The Authority accepts SKM's findings that the capital expenditure proposed for this project appears to be prudent and efficient.

(viii) Water Meter Replacement- 20mm Meters

Unitywater proposed capital expenditure of approximately $5.1 million over the interim period to replace 20mm water meters. In 2010/11, Unitywater propose to replace 6 379 20mm water meters across its northern area.

The project expenditure profile as proposed by Unitywater in its submission is outlined in Table 28 below.

**Table 28: Water Meter Replacement Program ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Water Meter Replacement Program | 1.6 | 1.7 | 1.8 | 5.1 |

*Source SKM (2010)*

SKM confirmed that the meter renewal program will improve metering accuracy which is important for billing, revenue and asset management functions. SKM advised that based on available information, there is a demonstrated need for the project. SKM advised that the project costs appear to be reasonable when compared to actual meter replacement costs incurred in 2008-09.

Noting that Unitywater have put a system in place to track average costs per meter replacement on a monthly basis in 2010/11, SKM recommend that the proposed expenditure for 2011/12 and 2012/13 be reviewed against these costs.

SKM found the proposed capital expenditure to be prudent and efficient for the 2010/11 financial year only at this stage.

SKM recommended further reviewing proposed capital expenditure in 2011/12 and 2012/13 when further supporting information becomes available.

The Authority accepts SKM's findings that the expenditure proposed for 2010/11 remain in the budget. The Authority will review the budget for 2011/12 and beyond further before making a decision on the prudency and efficiency of these costs. The revised expenditure profile is presented in Table 29 below.

**Table 29: Revised Water Meter Replacement Expenditure Profile ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Water Meter Replacement Program | 1.6 | Further review required | Further review required | 1.6 |

*Source SKM (2010)*

(ix) Water Supply Service Reservoir, Boundary Road Reservoir No 3 (24ML)

In its submission, Unitywater proposed capital expenditure of approximately $5 million over the 2010/11-2012/13 period to construct a 24 ML capacity reservoir to meet additional demand from the northern growth corridor. The proposed project expenditure profile is outlined in Table 30 below.

**Table 30: Proposed Expenditure profile - Boundary Road Water Supply Reservoir ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Boundary Road Water Supply Reservoir | 0.5 | 4.3 | 0.2 | 5.0 |

*Source SKM (2010)*

Unitywater have advised that there is a high probability that the project will not proceed within the next five years. Unitywater have therefore confirmed their intention to remove the project from the budget.

The Authority notes Unitywater's request to remove the project from the budget and has removed the project for price monitoring purposes.

(x) Water Supply Facilities - Switchboard Replacement Program

In its submission, Unitywater proposed capital expenditure of approximately $4.7 million over the 2010/11-2012/13 period to replace electrical switchboards and instrumentation to ensure service continuity and compliance with electrical and instrumentation legislation and standards. The proposed project expenditure profile is outlined in Table 31 below.

**Table 31: Proposed Expenditure Profile - Switchboard Replacement Program**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Switchboard Replacement Program | 0.7 | 2.3 | 1.7 | 4.7 |

*Source SKM (2010)*

At the time of SKM's review, there was insufficient information to undertake a detailed assessment of the prudency and efficiency of this project. The project has been removed from the budget pending further review.

(xi) Water Main Off-take and supply main from Northern Interconnector Pipeline.

In its submission, Unitywater propose capital expenditure of $4.3 million over the 2010/11-2012/13 period to construct a new water main linking the Boundary Reservoir Complex with the Northern Pipeline Interconnector. The proposed project expenditure profile is outlined in Table 32 below.

**Table 32: Proposed Expenditure Profile - Water Main Off-take - Northern Interconnector Pipeline ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Water Main Off-take | 2.0 | 2.1 | 0.09 | 4.2 |

*Source SKM (2010)*

SKM were unable to review this project for prudency and efficiency as Unitywater was unable to provide the requisite information in time for SKM to conduct its review. The project has been removed from the budget pending further review.

(xii) WPS Pump Replacement

In its submission, Unitywater propose $0.2 million in capital expenditure over the 2010-11-2012-13 period to upgrade Little Mountain pump station. The project will replace the pump bases on the pump station and the switchboard.

The program expenditure profile as proposed by Unitywater in its submission is outlined in Table 33 below.

**Table 33: Proposed Expenditure Profile - WPS Replacement ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| WPS Pump Replacement | 0.08 | 0.06 | 0.07 | 0.21 |

*Source SKM (2010)*

With respect to prudency, SKM's view is that there is a demonstrated need for the project. The pump bases were severely rusted and required replacement to avoid failure and subsequent interruptions to Unitywater's services. SKM advise that the old switchboard was beyond its useful life. SKM find the project to be efficient from a standard and scope of work point of view. SKM note that it was difficult to assess the efficiency of the project expenditure due to limited information being available on cost estimates.

SKM's review has found the proposed capital expenditure to be prudent and efficient for the 2010/11 financial year only at this stage as there is insufficient information to determine whether the project is prudent and efficient beyond 2010/11. SKM note that the availability of information is consistent with the stage of the project but recommend that the project budget for 2011/12 be removed for price monitoring purposes pending a review of additional information such as the works program once it becomes available.

The Authority accepts SKM's findings that the expenditure proposed for 2010/11 remain in the budget. The Authority will review the budget for 2011/12 and beyond further before making a decision on the prudency and efficiency of these costs (see Table 34).

**Table 34: Revised Expenditure Profile – WPS Replacement ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| WPS Pump Replacement | 0.08 | Requires further review | Requires further review | 0.08 |

*Source SKM (2010)*

(xiii) Water Main Installation - Hakae Court-Areca Court, Narangba

Unitywater proposed capital expenditure of $0.076 million over the interim period to install a water main in the area between Hakae Court and Areca Court, Narangba. The project was developed in response to a network analysis report which identified a fire flow deficiency in the area.

This project is designed to address this deficiency by installing 114 metres of 150mm water main. The project will ensure that flow requirements comply with guidelines issued by the Department of Environment and Resource Management

The project expenditure profile as proposed by Unitywater in its submission is outlined in Table 35 below.

**Table 35: Hakae Court/Areca Court Water Main Project ($m)**

| *Project* | *2010-11* | *2011-12* | *2012-13* | *Total* |
|---|---|---|---|---|
| Hakae Ct/Areca Ct Water Main Project | 0 | 0.08 | 0 | 0.08 |

*Source SKM (2010)*

SKM noted that based on the information provided, there is a demonstrated need for the project and therefore the project appears to be prudent. SKM found the project to be efficient in terms of the scope of the works undertaken and the standard of the works. SKM advised that the project costs are reasonable and within +/- 30% of typical rates.

SKM found the proposed capital expenditure to be prudent and efficient.

The Authority accepts SKM's findings that the capital expenditure proposed for this project is prudent and efficient.

Summary

The Authority notes that Unitywater expects to defer approximately $50 million in capital expenditure in 2010/11. Unitywater have submitted this as a prudent deferral of capital expenditure resulting from additional information becoming available since Unitywater made its submission, combined with an improved understanding of Unitywater's projects.

The Authority has added these savings to those identified by SKM. The Authority has applied Unitywater's 65% commissioning ratio to this $50 million in savings – this results in savings in 'commissioned' projects of $32.5 million in 2010/11 and the remaining $17.5 achieved in 2011/12.

The Authority notes that Unitywater have assumed (based on historic capitalisation) that 65% of the proposed annual capital expenditure will be capitalised in any one year. The Authority notes that Unitywater have not provided supporting evidence to demonstrate that 65% is an accurate reflection of historic capitalisation rates. In any event, capital expenditure should be included in the RAB only when it is commissioned, and contributes productivity capacity to the system.

Based on the analysis outlined earlier, the Authority notes that of the thirteen projects reviewed for Unitywater, the majority were found to be prudent and efficient for 2010/11. For 2010/11, adjustments of $3.2 million were made. These adjustments were due to two projects where there was insufficient information for SKM to review the projects and an adjustment of $0.5 million for the Boundary Road Reservoir project which was the only project found not to be prudent. Unitywater have confirmed that this project is no longer required.

For much of the expenditure in 2011/12 and 2012/13, insufficient data (and the early stage of planning) meant that the consultants were unable to come to a conclusion on prudency or efficiency. In particular, two projects (Northern Connector Water Main Off-take and the switchboard replacement program) were unable to be assessed as SKM were provided with no supporting information.

The Authority notes that the formation of Unitywater may present opportunities to review projects and programs. Amalgamation of the previous council businesses presents opportunities to revise how projects and/or programs are delivered. SKM did not have sufficient time to fully take these matters into consideration. The Authority supports ongoing reviews of these projects by Unitywater to ensure efficient project delivery.

The Authority proposes to subject projects and programs to ongoing review as part of its 2011/12 price monitoring review. If as part of future reviews, the information to justify the projects is not available (despite the stage of planning), the Authority will remove these costs from the capital expenditure forecasts. The Authority expects that entities would be developing their processes and systems to ensure that the prudency and efficiency of all projects can be optimally demonstrated over time. The Authority's 2011/12 price monitoring review will involve a review of actual capital expenditure in 2010/11, and the reasons for variations with original forecasts will be explored.

Based on SKM's findings, the Authority considers that the level of information provided for this review is broadly in line with the context of the newly formed entity, whereby Unitywater is undertaking a process of aligning the policies and procedures across two geographic areas.

A comparison between Unitywater's proposed capital expenditure and the Authority's adjusted capital expenditure (including contributed assets) is presented in Table 36 below.

**Table 36: Comparison between Unitywater's and Authority's capital expenditure ($m)**

| | *2010/11* | *2011/12* | *2012/2013* | *Total* |
|---|---|---|---|---|
| Capex (Unitywater) | 257.1 | 237.0 | 203.9 | 698.0 |
| + Donated assets | 30.8 | 25.8 | 26.0 | 82.6 |
| Efficiency gains | (32.5) | (17.5) | | (50) |
| - QCA adjustments | (3.2) | (8.7) | (2.0) | (13.9) |
| Total adjustments | -4.9 | -0.4 | 24.0 | -18.7 |

*Source Unitywater (2010) and QCA calculations.*

**In respect of data adequacy, the Authority notes that Unitywater assumed 65% of forecast capital works will be commissioned in any reporting year. The Authority considers Unitywater should develop more precise information systems to include capital expenditure in the RAB only when it is commissioned, and contributes productivity capacity to the system.**

**The Authority notes that currently Unitywater has a number of varying standards of service for customers and asset design as is expected of a newly formed entity. The Authority understands that work is underway to consolidate standards across the region.**

**The Authority notes that Unitywater expects to defer approximately $50 million in capital expenditure that was forecast to be incurred in 2010/11. The Authority supports prudent deferral and has included these savings in its revised estimates.**

**The Authority notes that of the proposed $698 million in capital expenditure to be commissioned over the interim period, the majority of sampled projects for 2010/11 were found to be prudent and efficient, except for adjustments of $3.2 million. For 2011/12 onwards, there was insufficient information to review the prudency and efficiency of a number of projects. These projects will be subject to ongoing review by the Authority.**

*Contributed, Donated and Gifted Assets*

As noted above, the 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 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.

Under the price monitoring framework accepted by the Government, the Authority recommended that the Government align the review processes for infrastructure charges and ongoing prices, and that the entities be made responsible for infrastructure charges. The Authority noted that, if this was not possible, the Authority would assess whether the method adopted by the entities to forecast contributed assets and capital contributions was reasonable in the circumstances.

*Submissions*

In its submission, the Department of Infrastructure and Planning questioned the benefits of permitting an entity to earn a return on contributed assets.

Unitywater indicated in its submission that it expected to receive approximately $83 million in contributed, donated and gifted assets over the interim period and approximately $139 million in capital (cash) contributions (see Table 37). The vast majority of cash contributions arise from Planning Scheme Policies (PSP's).

**Table 37: Unitywater - Contributed, Donated and Gifted Assets & Cash Contributions ($m)**

| | *2008/2009* | *2009/2010* | *2010/11* | *2011/12* | *2012/2013* | *Total 2011-13* |
|---|---|---|---|---|---|---|
| Contributed assets | 48.5 | 32.0 | 30.8 | 25.8 | 26.0 | 82.6 |
| Capital Contributions [a] | 78.3 | 63.4 | 45.0 | 46.4 | 47.9 | 139.3 |
| **Total** | **126.8** | **95.4** | **75.8** | **72.2** | **73.9** | **221.9** |

[a] *includes grants and subsidies*
*Source Unitywater (2010)*

Unitywater was unable to obtain complete and final information about contributed assets from councils for the 2009 and 2010 financial years.

For 2009/10, the Authority understands that the information gap is due to the audited financial accounts not being finalised in time for SKM's review. In this case, contributed assets for 2009/10 are forecasts based on council third quarter estimates.

Unitywater submitted that it received $126.8 million in contributed assets and capital contributions from councils in 2008/09 and $95.4 million in 2009/10.

For the interim period, developer provided assets are forecast from historic trends taking into account expected growth. Forecasts of Planning Scheme Charges are also based on historic trends.

In terms of contributed assets, Unitywater has retained the revenue offset approach, although it has advised that it will review this position annually throughout the interim price monitoring period.

*Authority Analysis*

As noted above the Authority is to accept as prudent and efficient and include in the RAB via capital expenditure all contributed assets and capital contributions received between 1 July 2008 and 30 June 2010.

Under the approved price monitoring framework, the entities should not earn a return on, or of, contributed assets and capital contributions. This is in accordance with principle six of the National Water Initiative Pricing Principles for the recovery of capital expenditure (Natural Resource Management Ministerial Council 2010). The Ministerial Direction allows the entities to choose an asset or revenue offset approach to the treatment of these assets from 1 July 2010. Both approaches can be such as to ensure that a return on, and of, these assets cannot be charged to users.

The Authority notes that the value of Unitywater's contributed assets for 2008/09 and 2009/10 cannot yet be verified as audited council financial accounts have not yet been finalised and/or provided. The Authority will review these figures once audited financial accounts are provided.

From 1 July 2010, the water and wastewater components of the infrastructure charging regimes of Unitywater's two council areas (council PSPs) transitioned to become Unitywater's SEQ Infrastructure Charges Schedule (ICS). In essence, Unitywater has inherited these upfront charges from councils. Under relevant legislation, Unitywater cannot significantly alter these charges unless they are approved by the Minister for Infrastructure and Planning.

The Authority also notes that the Government has convened an infrastructure charges taskforce to investigate the current infrastructure charging regime and opportunities to simplify charges and provide greater certainty. The taskforce has recently released for comment an interim consultation report which includes maximum standard infrastructure charges. Should these maximum charges be adopted by Government, and apply to Unitywater, they are likely to affect forecasts of contributed assets and cash contributions.

Given the above, the Authority considers it to be reasonable for Unitywater's forecasts of contributed donated and gifted assets and cash contributions from 1 July 2010 to be based on available council forecasts.

The Authority notes that Unitywater has applied the revenue offset approach to the treatment of contributed assets and capital contributions for 2010/11 (while reserving its decision on this for years beyond 2010/11). In line with this decision, the Authority has reduced its estimate of Unitywater's 2010/11 costs for water by $33.0 million and by $42.8 million for wastewater. This ensures customers are not paying twice for relevant assets.

**The Authority considers that the Unitywater's reliance on councils' forecasts of contributed assets and capital contributions is reasonable.**

## 3.7 Rolling Forward the RAB

In accordance with the Ministerial Direction and normal regulatory practice, the initial regulatory asset base 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 disposals occur evenly throughout the year.

For indexation, the Authority is required under the Direction to take into account the latest available ABS CPI (all groups, Brisbane) - however for 2009/10, the Queensland State Budget inflation forecast may be used.

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 submission*

Unitywater submitted that regulatory depreciation values as at 1 July 2008 have been calculated on the basis of the assets remaining useful lives. The asset value for each asset has been grossed up or down to align with the Ministerially advised asset values.

Depreciation for asset acquisitions (comprising capitalised assets and developer provided assets) during the period 1 July 2008 and 30 June 2010 has been calculated on the basis of the assets useful life as calculated by the participating councils and pro-rated in accordance with the acquisition date. Unitywater note that this information was incomplete. Where information was incomplete, Unitywater assumed a useful asset life of 50 years. Unitywater noted their intention to revise these estimates once further information becomes available.

Depreciation for assets acquired post 1 July 2010 has been calculated based on asset lives provided by engineering consultants engaged during the SEQ water reform phase 2 process. Unitywater note that a new Non Current Asset Policy has been approved by Unitywater's Board. The policy will result in asset lives different to those used in its submission however, Unitywater estimate that the variation to depreciation values will not be material. In any event, Unitywater propose to recalculate depreciation as part of the process to finalise the interim RAB.

For the purpose of calculating the RAB roll-forward, Unitywater have included estimates of completed assets only. In formulating these estimates, Unitywater have assumed (based on historic capitalisation) that 65% of the proposed annual capital expenditure will be capitalised in any one year.

Unitywater adopted a straight line approach to depreciation for all assets.

Unitywater applied an indexation rate of 2.02% in 2008/09, 2.5% in 2009/10 and 2.48% in 2010/11 and beyond. Unitywater noted in their submission that for financial year 2010, they intend on revising their indexation assumption to align with the CPI for that period once the RAB for 1 July 2010 is finalised.

*Authority Analysis*

Unitywater's initial RAB as at 1 July 2008 is $849 million for water and $1.2 billion for wastewater. As discussed earlier, due to information shortcomings, SKM were unable to verify the allocation of Unitywater's initial RAB. The initial RAB, and the roll-forward, should therefore be viewed as interim only.

Actual capital expenditure to 30 June 2010 and the Authority's view of prudent and efficient capital expenditure in 2010/11 has been added to the interim initial RAB.

The Authority engaged SKM to review the asset lives provided by Unitywater against those in their fixed asset registers. SKM found that the existing useful lives recorded in the asset register as at 1 July 2008 correspond with the asset lives provided in Unitywater's RAB at that date.

SKM found the asset lives applied to new assets to be reasonable. However, SKM noted that where assets were grouped by asset class, a wide range of remaining asset lives were identified within each class. For example, the identified asset lives for meters ranged from 15 years to 100 years. Unitywater then calculate an average asset life for each asset class. SKM recommended that in future, Unitywater disaggregate asset classes further to reduce the range of asset lives that exist within each asset class. SKM also recommend a standard and unified approach to grouping assets by asset class in future. SKM also noted that the remaining useful lives of some assets did not seem appropriate given the asset acquisition date.

Notwithstanding, for price monitoring purposes in 2010/11, the Authority has accepted the asset lives provided by Unitywater and supports Unitywater's decision to review them. It would be expected that a comprehensive review of individual asset lives would form part of any deterministic regulatory regime.

Under the approved framework, the Authority recommended that forecast inflation be estimated using forecasts of CPI as determined by the difference between the RBA return on the market rate for five year bonds and five year capital indexed bonds.

The Authority has adopted the ABS CPI for Brisbane for use in indexing the asset values in the RAB. For 2008/09, this was 2.02%. For 2009/10, the Authority has accepted Unitywater's 2.50% estimate as this is the Queensland State Budget inflation forecast for 2009/10. In relation to forecast CPI from 1 July 2010, the Authority has adopted an estimate of 2.48% which is the difference between the RBA return on the market rate for five year bonds and five year capital indexed bonds, as proposed in the Authority's framework report.

The Authority has rolled forward the initial, interim RAB using the resulting values for capital expenditure, indexation and disposals (see Tables 38 and 39).

**Table 38: Asset Base Roll Forward – Water ($m)**

| | *2008/09* | *2009/10* | *2010/11* |
|---|---|---|---|
| Opening RAB | 849.31 | 906.05 | 985.99 |
| + Capital expenditure | 58.99 | 76.31 | 41.96 |
| + Indexation | 17.75 | 24.34 | 25.69 |
| - Depreciation | 19.53 | 20.71 | 21.66 |
| - Disposals | 0.45 | - | - |
| - Capital Contributions[1] | - | - | - |
| **Closing RAB (QCA)** | **906.05** | **985.99** | **1,031.98** |

**Table 39: Asset Base Roll Forward – Wastewater ($m)**

| | *2008/09* | *2009/10* | *2010/11* |
|---|---|---|---|
| Opening RAB | 1,179.88 | 1,243.80 | 1,461.00 |
| + Capital expenditure | 70.96 | 216.14 | 210.19 |
| + Inflationary gain | 24.54 | 34.68 | 39.70 |
| - Depreciation | 31.04 | 33.62 | 36.97 |
| - Disposals | 0.56 | - | - |
| - Capital Contributions[1] | - | - | - |
| **Closing RAB (QCA)** | **1,243.80** | **1,461.00** | **1,673.92** |

[1] *Only relevant for asset base offset approach to the treatment of capital contributions. Unitywater has adopted a revenue offset approach. Source Unitywater (2010), SKM (2010), QCA*

The Authority's estimate of the regulatory opening asset base for price monitoring purposes in 2010/11 does not differ materially from that of Unitywater ($2,446.99 million compared to Unitywater's $2,435.93 million).[40] For water, the Authority's estimate of $985.99 million is higher than Unitywater's estimate of $983.85 million. For wastewater, the Authority's estimate of $1,461.00 million is also higher than Unitywater's estimate of $1,452.08 million.

The Authority's estimate of the closing asset value as at 30 June 2011 is $1,031.98 million for water and $1,673.92 million for wastewater. Unitywater's estimate for water is $1,037.70 million and $1,695.76 million for wastewater.

[40] Unitywater's $2,435.93 million RAB reflects supporting information provided to the Authority and excludes non-regulated services. It therefore differs from the $2,443.27 million in their written submission.

**The Authority's estimate of the regulatory opening asset base for price monitoring purposes in 2010/11 does not differ materially from that of Unitywater ($2,446.99 million compared to Unitywater's $2,435.93 million).**

**The Authority's estimate of the closing asset value as at 30 June 2011 is $1,031.98 million for water and $1,673.92 million for wastewater. Unitywater's estimate for water is $1, 037.70 million and $1,695.76 million for wastewater.**

## 3.8 Return on Capital

The return on capital compensates investors for the opportunity cost of their investment. The Authority uses a nominal post-tax weighted average cost of capital (WACC) to determine the appropriate return on capital on the regulatory asset base, specifically Officer's 'vanilla' WACC3.

For this price monitoring review, the Authority has adopted its standard approach to estimate the WACC. To this end, the Authority engaged Dr Martin Lally to provide specialist advice in relation to appropriate WACC parameter values.

Whether the current approach should be applied in the SEQ water sector in the future is an issue to be explored over the interim period along with the form of regulation to be applied.

*Unitywater submission*

Unitywater, in conjunction with Queensland Urban Utilities and Allconnex Water, engaged Competition Economists Group (CEG) to provide advice on WACC parameters.

Based on CEG advice, Unitywater (and Allconnex) proposed a WACC of 9.88% (post-tax nominal) for price monitoring. Unitywater advised it adopted a WACC of 8.44% in setting prices for 2010/11. QUU adopted many of CEG's recommended parameter values in its submission but adjusted others to reflect the Authority's most recent approach.

The entities' and CEG's reasoning is outlined in Appendix B.

*Authority Analysis*

As noted above, many of the WACC parameters in the Unitywater's submission are identical to those of the other entities.

Therefore, for clarity and to avoid repetition, the Authority has set out its detailed assessment of Unitywater's (and the other entities') WACC parameter values as per its standard approach in Appendix B. The analysis in this appendix is relevant to all entities.

As noted there, the main difference between Unitywater's and the Authority's WACCs is that under the Authority's current approach, it matches the term of the risk-free rate and debt margin to the term of the regulatory period. The Authority's current approach has been explained in detail and applied by the Authority in its June 2010 Draft Decision on QR Network's 2010 DAU - Tariffs and Schedule F (which forms part of the undertaking approved in October 2010) and in its June 2010 Final Report on the Gladstone Area Water Board.

The Authority's WACC of 9.35% (Appendix B) is lower than Unitywater's proposed 9.88% for price monitoring but higher than the 8.44% WACC Unitywater actually used in setting prices.

To calculate the return on capital, the Authority has applied the WACC to the entity's opening regulatory asset base and half the capital expenditure during the relevant year.

While the Authority has undertaken a comparison of the Authority's proposed return on capital for 2010/11 against that claimed by Unitywater, the Authority also sought to compare Unitywater's and the Authority's estimates for 2010/11 with those of councils for 2009/10.

It should be noted that such estimates of council's 2009/10 return on capital are based upon available records of dividends, actual cost of debt, retained earnings and capital gain (see Table 40). These do not necessarily reflect the total benefits accrued to councils over the costs of providing services as they do not necessarily reflect other benefits accruing to councils such as franchise fees.

Any such comparison should therefore be treated with caution. A review of past arrangements is not considered to be consistent with the terms of reference of this review which relates to Unitywater's forecasts of revenues and costs for 2010/11.

**Table 40: Return on Capital ($m)**

| | *Costs 2009/10* | *Costs 2010/11* | *Water Costs 2010/11* | *Wastewater Costs 2010/11* |
|---|---|---|---|---|
| Return on Capital (Unitywater)[41] | 185.23 | 254.89 | 99.16 | 155.23 |
| Return on Capital (QCA) | - | 240.65 | 94.18 | 146.47 |
| **Difference** | **-** | **8.64** | **-0.04** | **8.68** |

*Source Unitywater data template and subsequent information – return on and of capital for 2009/10 reflect financial data provided by councils. Return on capital in 2009/10 is the sum of interest, dividends, retained earnings and capital gain. Return on capital for 2010/11 onwards is based on economic regulatory approaches.*

**The Authority proposes to use a WACC of 9.35% for interim price monitoring.**

## 3.9 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 Direction requires the Authority 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. The Ministerial Direction also requires the Authority to accept the operational constraints imposed by the SEQ Urban Water Arrangements Reform Workforce Framework 2010. These constraints include that there are to be no forced redundancies during the interim period.

The Authority notes that these constraints do not apply to new employees engaged temporarily to perform work on the establishment of the entities or independent contractors or employees engaged by labour hire that provide services to either the entity or participant council.

The Authority has been directed to monitor changes in operating costs and their reasonableness over time.

[41] At the time of price setting, Unitywater estimated a $236.54 million required return on capital for 2010/11, using a WACC of 8.44%. The costs submitted to the Authority reflect more recent information available to Unitywater at the time of making its submission.

The Authority engaged SKM to review the reasonableness of Unitywater's forecasts of operational expenditure for its water and wastewater activities from 1 July 2010.

*Unitywater submission*

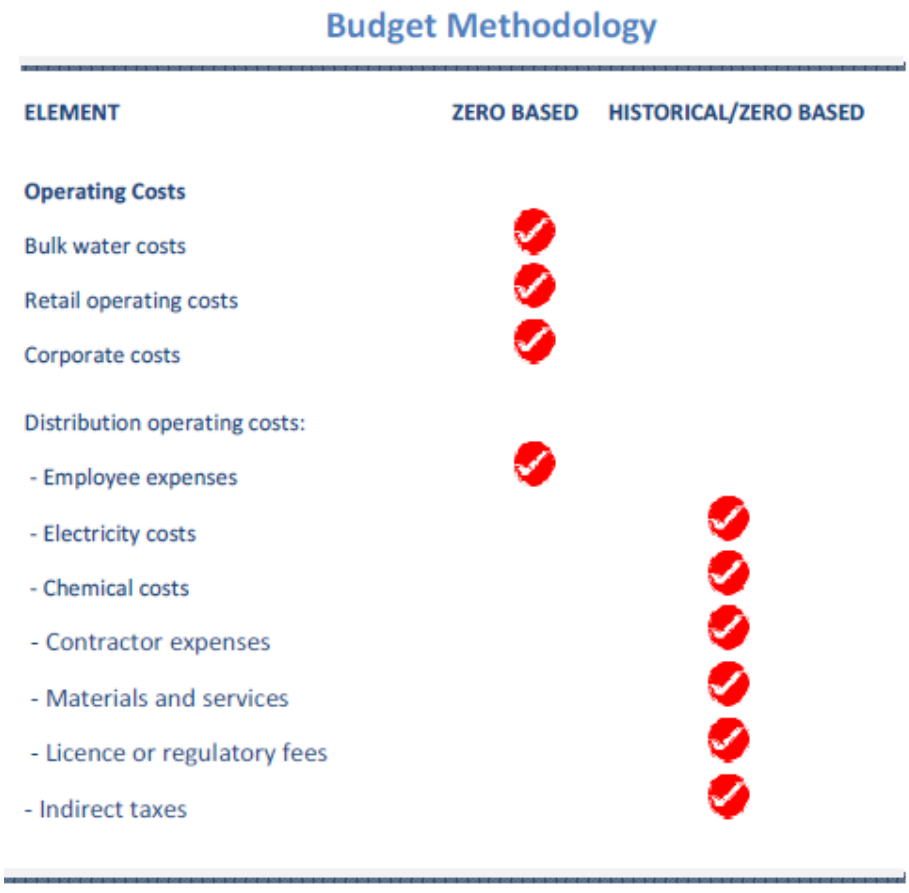
Unitywater has proposed a total of $756 million of operational expenditure over the interim period, comprised of $465 million of expenditure for water and $292 million for wastewater.

Unitywater allocated these operational expenditures to all appropriate costs categories. Unitywater allocated operational costs to the all services excluding the other core wastewater services and aggregate non-core wastewater services. Bulk water costs accounted for 37 % of Unitywater's total operating costs over the interim period. The materials and services category accounted for a further 18% of total operating costs.

Operational Budget Development

Unitywater noted in its submission that it constructed its initial budget based on a combined methodology of zero based costs and historic values escalated for growth and price factors (Chart 4).

**Chart 4: Unitywater Budget Methodology**




*Source Unitywater(2010)*

In its submission, Unitywater outlined the budget rules that were applied in generating its operating budget:

(a) all expenses and revenues were budgeted in FY2010 dollars;

(b) indexation for price and growth factors were applied universally on budget consolidation;

(c) operational projects were assumed to have internal labour and material costs included in the total project cost estimates;

(d) the labour budget was based on the respective labour establishments of Moreton Bay Water and Sunshine Coast Water (including vacancies). Labour budgets reflected various working arrangements of employees and included on-costs, overtime and annualised allowances;

(e) for retail and corporate business functions, labour establishments were created including staff costs for employees transferred from the two regional councils. Unitywater envisaged that further refinement of staff establishments will be required during Unitywater's quarterly budget review process. Changes will occur primarily due to the fluidity of services provided in-house compared to services provided under service level agreements with the respective councils. Additional functional realignments will mean that functional reporting will change. No material impact on service allocations are expected to result from functional realignments.

In forecasting operating costs beyond 2010/11, Unitywater has applied both generic cost indices and geographic specific growth factors to the 2010/11 budget. The high level indices and growth factors used by Unitywater to develop the 2011/12 and 2012/13 budgets are detailed in Table 41.

**Table 41: Operating Cost Indexes and Growth Factors**

| ***Cost Group*** | ***Cost Index*** | | ***Annual Growth Factors*** | |
|---|---|---|---|---|
| | 2011/12 | 2012/13 | Sunshine Coast | Moreton bay |
| Population growth | | | 2.35% | 2.29% |
| Direct Labour | 4.0% | 4.0% | | |
| Bulk Water | Estimate bulk volumes at Water Grid Manager forecast prices indexed at 2.5% pa | | | |
| -Sunshine Coast | 28% | 22% | | |
| -Moreton Bay | 18% | 15% | | |
| Electricity | 7.9% | 7.9% | Aligned to percentage change in bulk water volumes | |
| Chemicals | 3.5% | 3.5% | Aligned to percentage change in bulk water volumes | |
| Sludge Handling | | | | |
| Other Costs | 2.9% | 2.9% | | |

*Source Unitywater (2010)*

Operational Expenditure forecasts

Unitywater's forecast total operational expenditure over the period 2010/11 to 2012/13 is set out in Tables 42 and 43 respectively.

**Table 42: Unitywater's Forecast Operating Costs Water 2010-2013 ($m)**

| | ***2010/11*** | ***2011/12*** | ***2012/13*** |
|---|---|---|---|
| Bulk Water Costs | 75.33 | 93.04 | 114.18 |
| Retail Operating Costs | | | |
| Customer service and billing | 2.64 | 2.74 | 2.84 |
| Regulated demand management costs | na | na | na |
| Community service obligation costs | na | na | na |
| Other Costs | 3.07 | $5.71 | $5.88 |
| Distribution Operating Costs | | | |
| Employee expenses | 16.57 | 17.27 | 17.95 |
| Contractor expenses | 6.29 | 6.45 | 6.63 |
| GSL payments | na | na | na |
| Materials and services (including electricity and chemicals) | 6.49 | 6.79 | 7.10 |
| Licence or regulatory fees | 0.04 | 0.04 | 0.05 |
| Natural resources management costs | na | na | na |
| Corporate costs | 22.98 | 21.59 | 21.87 |
| Indirect Taxes | 0.39 | 0.42 | 0.42 |
| **Total Operating Costs** | **133.81** | **154.03** | **176.90** |

*Note na indicates that costs were not disaggregated to these categories in a manner consistent with the Authority's data template or are not applicable.*

*Source Unitywater (2010,) SKM (2010), QCA*

**Table 43: Unitywater's Forecast Operating Costs Wastewater 2010-2013 ($m)**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Retail Operating Costs | | | |
| Customer service and billing | 2.83 | 2.94 | 3.04 |
| Regulated demand management costs | na | na | - |
| Community service obligation costs | na | na | - |
| Other Costs | 3.27 | 6.07 | 6.25 |
| Distribution Operating Costs | | | - |
| Employee expenses | 26.09 | 27.20 | 28.28 |
| Contractor expenses | 18.20 | 18.71 | 19.25 |
| GSL payments | na | na | - |
| Materials and services (including electricity and chemicals) | 16.77 | 18.05 | 19.17 |
| Licence or regulatory fees | 0.49 | 0.50 | 0.52 |
| Natural resources management costs | na | na | - |
| Corporate costs | 25.14 | 23.84 | 24.21 |
| Indirect Taxes | 0.40 | 0.43 | 0.43 |
| **Total Operating Costs** | **93.18** | **97.73** | **101.13** |

*Note na indicates that costs were not disaggregated to these categories in a manner consistent with the Authority's data template.*

*Source Unitywater (2010), SKM (2010), QCA*

Unitywater has forecast that its total operational expenditure will increase from $160.87 million in 2008/09 to $226.99 million in 2010/11 to $278.03 million in 2012/13 - an average annual increase of 14.7%.[42]

Unitywater's operating costs for water and wastewater are forecast to increase over the interim period by 32% and 9% respectively.

Unitywater stated in its submission that the primary drivers for increases in operating costs are bulk water costs, population growth, compliance with environmental standards, new corporate functionality and new retail functionality.

*Authority's Analysis*

The Authority engaged SKM to review the reasonableness of Unitywater's operational expenditure. The assessment of the reasonableness of operational expenditure was intended to take into account the relevant service standards, Frontier's revised demand forecasts, possible

[42] At the time of price setting, Unitywater estimated $208.97 million in operating expenditure for 2010/11. The costs submitted to the Authority reflect more recent information.

substitution between capital and operating expenditure and the potential for efficiency gains and economies of scale.

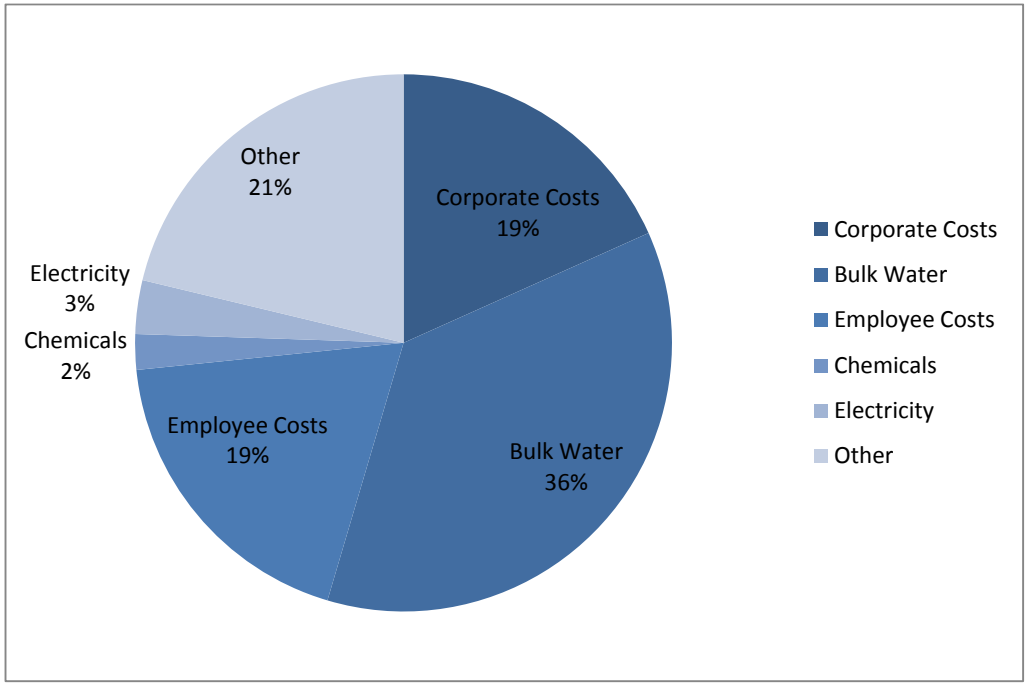
### Adequacy of Operational Expenditure Data Information Provision

Prior to assessing the reasonableness of proposed operational expenditure, SKM reviewed Unitywater's submission to ensure that Unitywater provided a comprehensive and accurate information return.

SKM found that operating costs have been allocated against most of the categories identified in the Authority's information requirements for 2010/11. Therefore, sufficient information was available for SKM to review the reasonableness of Unitywater's operating expenditure.

In response to a request for information from SKM, Unitywater provided operational expenditure on a more disaggregated basis which separately identified electricity and chemical costs (Chart 5).

**Chart 5: Unitywater's Operating Costs 2010-2013**




*Source SKM (2010)*

### Operational Budgeting

SKM reviewed the policies and procedures followed by Unitywater to ensure that they represented good industry practice. SKM reviewed the budget guidelines used in the preparation of the 2010/11 operational budget and found that the guidelines provide a comprehensive guide to a range of aspects associated with the budget development and approval process including:

(a) outline of the budget process;

(b) who has approved the process;

(c) responsibilities;

(d) budget approval and development;

(e) protocols for changes and inter-council communications;

(f) parameters to be applied (e.g. CPI);

(g) review and approval programme; and

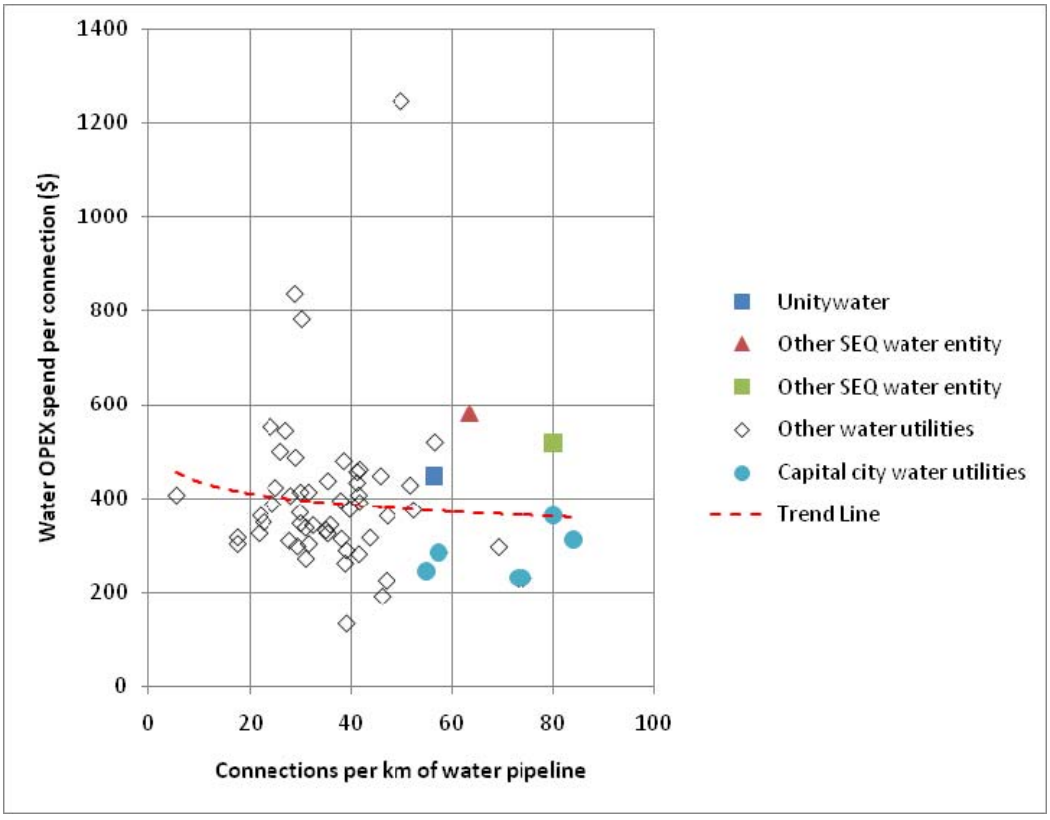
(h) schedules to be produced.

In regards to the budget process adopted by Unitywater's, SKM found that the operational expenditure budget process represents good industry practice.

Reasonableness

SKM benchmarked Unitywater's 2010/11 aggregate operational expenditure for water and wastewater against a range of other Australian utilities using two key benchmarks. For water, Unitywater's relative performance was measured using both opex spend per connection and the number of connections per kilometre (Chart 6).

**Chart 6: Water Operational Expenditure**




*Note CPI has been applied to other utilities data to inflate the costs contained in the 2008/9 NWC Performance Report to 2010/11*
*Source SKM (2010)*

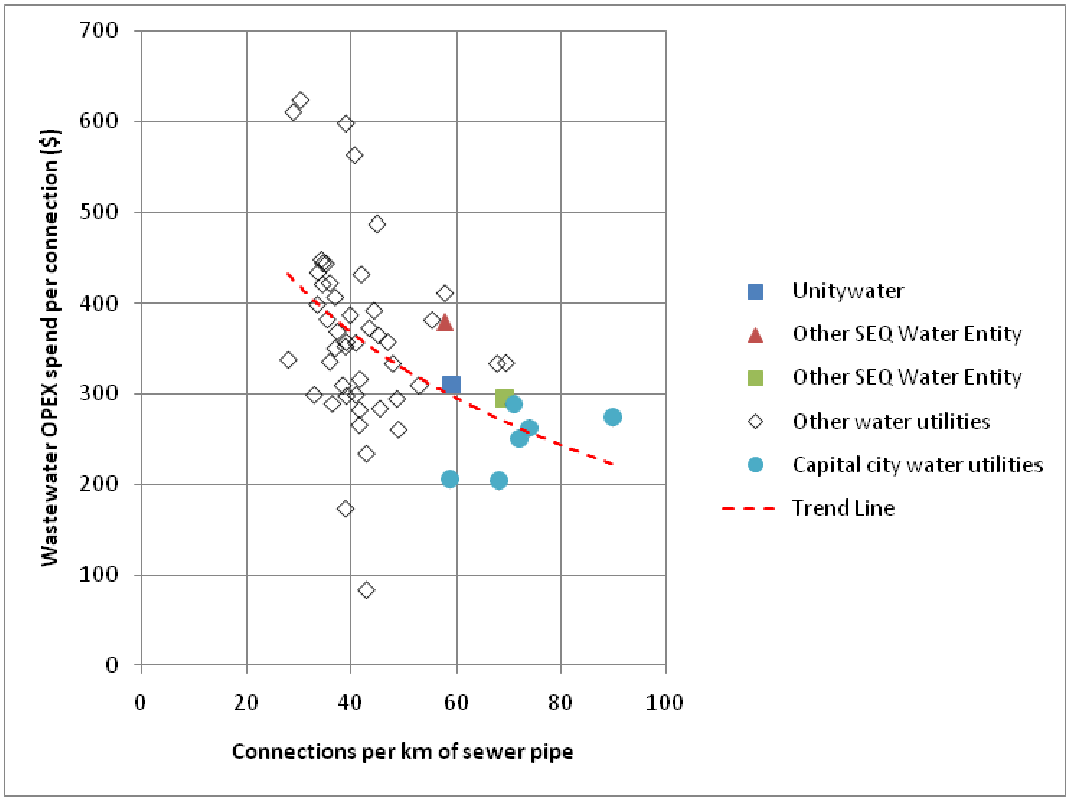
SKM found that Unitywater's operational expenditure for water in 2010/11 was generally higher than that of similar sized water utilities in other jurisdictions. SKM noted that this was due in part to higher SEQ bulk water costs. When bulk water costs are removed from this

analysis, SKM found that, on a per connections basis, Unitywater's operating expenditure for 2010/11 ($173/connection) lies above some of its interstate peers (Sydney $139/connection and Melbourne $97-$168/connection).

The Authority notes that SKM's benchmarks for operating costs for other water utilities (barring those in SEQ) assume other entities' costs per connection have remained constant in real terms since 2008/09. There would therefore appear to be some further opportunity for efficiency gains to achieve best practice.

Using the same method for Unitywater's wastewater operational expenditure (Chart 7), SKM found that Unitywater's proposed 2010/11 wastewater operating expenditure is in line with that of other Australian water utilities.

**Chart 7: Wastewater Operational Expenditure**




*Note CPI has been applied to other utilities data to inflate the costs contained in the 2008/9 NWC Performance Report to 2010/11*
*Source SKM (2010)*

The Authority notes that this high-level analysis shows where Unitywater's operating costs for 2010/11 fall within a range of values bounded by other water utilities, and indicates the extent of operating efficiencies that could potentially be achieved.

The Authority notes that economic regulators in other jurisdictions have applied efficiency gains to water retail businesses' proposed operating expenditures of up to 3.5% (NWI Steering Group on Water Charges 2007).

Taking into account the above, the Authority considers it is reasonable to assume that Unitywater should be able to achieve efficiency gains in its non-bulk operating costs in 2010/11. The Authority has therefore sought to impose a high level efficiency target for Unitywater in

2010/11 of 2% of total non-bulk operating costs. This results in a reduction of total operational expenditure of $3.05 million.

The Authority notes that another SEQ entity has identified non-bulk operational savings of up to 16.7%. Given that this has not been fully investigated at this stage, the Authority is not currently minded to apply this saving to Unitywater in this review. However, the Authority will be seeking further information on this matter and will be pursuing efficiency gains from amalgamation over the interim price monitoring period and beyond. Efficiency targets for 2011/12 and 2012/13 are discussed further below.

SKM then sought to review key components of Unitywater's submitted operating expenditure.

Reasonableness of Sampled Costs

SKM selected a sample of 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. SKM has reviewed bulk water costs, employee costs, corporate costs, electricity and chemical costs. This sample captures 80% of the total operational expenditure (see Table 44) over the forecast period.

**Table 44: Unitywater Operating Costs ($m)**

| *Cost Centre* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| *Bulk water* | 75.33 | 93.04 | 114.18 |
| *Corporate Costs* [a] | 49.20 | 46.35 | 47.00 |
| *Employee costs* | 46.15 | 48.90 | 50.80 |
| *Electricity* | 7.55 | 8.33 | 9.21 |
| *Chemicals* | 5.20 | 5.44 | 5.70 |
| ***Total Sample*** | **183.43** | **202.06** | **226.89** |
| ***Total Expenditure*** | **234.16** | **259.12** | **285.60** |

*Note includes costs related to non-regulated services*
*Source SKM (2010), Unitywater (2010)*

(a) Bulk Water Cost

SKM examined Unitywater's tariffs and confirmed that the bulk water tariffs charged to customers are consistent with those charged by the SEQ Water Grid Manager. SKM found that Unitywater's operating budget demonstrates that prices charged by the SEQ Water Grid Manager 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 Frontier Economics recommended adjustments to the volume of water sales forecast by Unitywater (see section 3.4) and made corresponding changes to bulk water purchases. SKM has accepted Frontier's recommendations and has subsequently adjusted Unitywater's operating costs associated with the purchase of bulk water for 2010/11 (see Table 45). These adjustments did not affect Unitywater's bulk water costs for 2010/11.

**Table 45: Revised Bulk Water Costs ($m)**

| *Geographic Area* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Moreton | 42.15 | 52.13 | 61.71 |
| Sunshine Coast | 33.18 | 42.24 | 51.28 |
| **Total** | 75.33 | 94.37 | 112.99 |
| **Unitywater Proposed Total** | 75.33 | 93.04 | 114.18 |
| **Variance** | 0.00% | 1.43% | -1.04% |

*Source Frontier Economics (2010), Unitywater (2010), Queensland Water Commission (2010)*

On 5 December 2010, the Treasurer and Minister for Natural Resources, Mines and Energy and Minister for Trade announced a series of reforms to the SEQ water industry. Included in these reforms was a revision to the long term bulk water price path from 2011/12. Bulk water prices for 2010/11 were unchanged.

The Authority has revised Unitywater's bulk water expenditure in 2011/12 and 2012/13 to reflect these revised prices. These changes reduce Unitywater's bulk water expense by $4.7 million over the price monitoring period. However, the reductions in bulk water prices endorsed by the Minister were, in Unitywater's case, offset by increases in bulk water costs arising from adjustments to demand.

For example, in 2011/12, the Authority has adjusted the bulk water costs upwards to reflect adjustments in demand which have more than offset reductions in the bulk water costs as advised by the Minister. The adjusted totals, taking account of adjustments to demand and reductions in bulk water costs are reflected in Table 45.

(b) Corporate Costs

SKM noted that corporate costs account for 21.0% of Unitywater's overall operating costs in 2010/11 before reducing to 16.5% in 2012/13.

SKM referred to guidelines put out by 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. The CCQG guidelines indicate that for agencies of greater than 350 full time equivalent employees, the benchmark level for corporate overheads is between 10% and 12% of overall operating costs.

In response to SKM, Unitywater submitted there may not be a strict correlation between corporate costs with growth in customers and demand. Secondly, there can be step change increments associated with growth in the business, for example Information and Communication Technology systems that have a capacity constraint.

Unitywater submitted that key contributing factors to its high level of corporate cost expenditure included salary and wage expenditure and some once-off project costs including those incurred to develop master plans, network modelling, asset management plans and to develop and review standards and specifications.

SKM concluded that in their opinion that corporate costs that account for 20% or more of overall operating costs is at the upper bound of what could be considered reasonable.

Unitywater did not apply a growth factor to its forecast of corporate cost. It has however applied a cost escalation factor. For this cost escalation Unitywater has adopted a general cost escalation factors of 2.9%. SKM has found this to be reasonable as it is in line with the RBA's target band for CPI.

The exception to the application of this escalation factor are the Service Level Agreements (SLA) with shareholding councils. Unitywater has a policy of moving to self sustainability as soon as possible. SKM noted that costs for SLA are budgeted to reduce from $8.0m in 2010/11 to $6.6M in 2012/13.

These services are generally a continuation of pre-existing systems and services to enable an orderly transition to Unitywater: They include: financial accounting, payroll services, development and management charges, call centre, inventory services and depot sites and head office accommodation.

It is envisaged the amalgamation of the two council water businesses into Unitywater would ultimately achieve efficiency gains in service delivery, economies of scale and reduced corporate costs.

(c) Employee Costs

Under the Direction, the Authority must accept the operational constraints imposed by the SEQ Urban Water Arrangements Reform Workforce Framework 2010 (SEQ Framework). SKM noted the most significant constraint is that there are to be no forced redundancies or overall loss of employment directly as a result of the water reforms, during the reform period. Also, there are to be no forced relocations within 12 months from the date of transfer.

SKM noted that the operational constraints imposed by the SEQ framework limit the ability of Unitywater to achieve full labour efficiency.

The increase in Unitywater's employee costs (Table 46) has been attributed to labour cost increases. Unitywater have not identified any growth in employee numbers, but have indicated that vacancies have been included when calculating the employee costs. It is noted that the employee costs provided by Unitywater indicates an increase in 2011/12 of 4.3%. Unitywater have nominated a labour cost escalation rate of 4.0% for 2011/12 and 2012/13.

SKM benchmarked Unitywater's labour cost escalation index against both the historic ABS Labour Price Index for the hourly rates for public servants in the Electricity, Gas, Water and Waste Services and the AERs forecasts of wage price increases in utilities sector (Table 46).

SKM concluded that Unitywater's labour cost indices are in line with both the AER forecast indices and the historic trends as derived from the Labour Price Index. The labour cost indices are therefore considered reasonable.

The Authority notes that natural attrition should be a source of potential efficiencies even within the constraints of the SEQ framework, however the natural attrition of required skills will require replacement.

However, in the absence of a readily available benchmark, the Authority has not sought to attribute quantifiable efficiency gains specifically to labour costs in this review. However, the Authority intends to pursue this issue further over the interim period, and an overall target for efficiency gains is discussed further below.

**Table 46: Comparison of Labour Cost Escalation Indices**

| | *2008/09* | *2009/10* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Unitywater | - | - | - | 4.00% | 4.00% |
| Australian Energy Regulator | 4.90% | 3.60% | 3.80% | 4.20% | 3.90% |
| ABS, Labour Price Index | 4.38% | 4.40% | | | |

*Source Australian Energy Regulator (2010), Australian Bureau of Statistics (2010)*

(d) Electricity Costs

SKM found that Unitywater's electricity purchases for the major sites (e.g. sewage treatment plants) involve contracts novated from both Moreton Bay and Sunshine Coast councils. Unitywater advised SKM that these were entered into by an open tender process that was jointly conducted by the councils.

Unitywater noted that a new contract for the purchase of electricity for minor sites negotiated as an open tender is expected to realise savings from the previous council arrangement over the three years of the contract.

SKM benchmarked Unitywater's electricity cost escalation factors against the Queensland Benchmark Retail Cost Index (BRCI) and the Australian Bureau of Statistics Consumer Price Index for electricity (see Table 47). SKM found that Unitywater's price escalation for regulated tariffs in 2010/11 (7.9%) to be (broadly) consistent with both the BRCI (13.29%) and CPI for electricity (15.5%).

**Table 47: Electricity Cost Escalation Benchmarks**

| | *2008/09* | *2009/10* | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|---|---|
| Unitywater | - | - | 7.90% | 7.90% | 7.90% |
| BRCI | 5.38% | 11.82% | 13.29% | | |
| ABS CPI for electricity in Brisbane | 11.60% | 8.30% | 15.50% | | |

*Source QCA (2010), Australian Bureau of Statistics (2010)*

SKM noted that the type of electricity purchase arrangement will have significant impact on Unitywater's electricity costs. The Authority supports this view and notes that Unitywater should seek out the most efficient option within its regulatory and contractual obligations.

The Authority notes that SKM's benchmarking does not take account of non-regulated price changes. As Unitywater could not provide the share of its electricity purchases from regulated and contestable sources, the Authority has used available information from other sources to estimate a 25% share of total costs from electricity supplied under regulated tariffs and 75% from contestable market contracts.

Assuming no change in the energy price component of contestable market contracts, the Authority has estimated the total price increase in these contracts would be 8.18%[43] for 2010/11. Regulated tariffs increased by 13.29% (the 2010/11 BRCI).

Based on the above the Authority estimates that Unitywater's weighted average electricity price growth for 2010/11 may be around 9.5%. The Authority therefore finds that Unitywater's proposed price escalation factor of 7.9% for 2010/11 is reasonable.

In estimating the potential price growth in contestable contracts for 2011/12, the Authority notes that network and distribution charges will increase by 6.8% per annum. Assuming that energy charges do not increase over this period and the share of network costs also remains constant, contestable electricity prices will grow by 3.20%. Regulated tariffs are forecast to increase by 5.83% in 2011/12.

Based on the above, the Authority has calculated a weighted average electricity price increase of 3.85% for 2011/12. [44] (Prior to the release of the Authority's Draft Decision on the 2011/12 BRCI, SKM estimated a 7.9% increase as reasonable – this view is now superseded by subsequent events).

The Authority has applied the same price increase for 2012/13 as for 2011/12. [45] The Authority has also revised Unitywater's growth forecasts to align with the percentage change in bulk water volumes arising from Frontier Economics' revised demand forecasts. The revised forecast for electricity costs are presented in Table 48.

**Table 48: Revised Unitywater Electricity Costs ($m)**

| | ***2010/11*** | ***2011/12*** | ***2012/13*** |
|---|---|---|---|
| Water | 1.09 | 1.20 | 1.29 |
| Wastewater | 6.46 | 6.96 | 7.40 |
| **Total** | **7.55** | **8.17** | **8.69** |
| **Unitywater Proposed Total** | **7.55** | **8.34** | **9.21** |
| **Variance** | **0.0%** | **-2.1%** | **-5.6%** |

*Source Unitywater (2010), QCA (2010)*

(e) Chemical costs

Chemicals are used to treat drinking water before delivery to customers, and for wastewater prior to discharge. The need for chemical use is dictated by drinking water standards and compliance with operational licenses for wastewater discharge.

Unitywater's expenditure on chemicals is forecast to increase from $5.2 million in 2010/11 to $5.7 million in 2012/13. In determining theses forecasts Unitywater have used a general price escalation index of 3.5% based upon historical account information.

[43] 8.18% = 17.4% x 0.47. This assumes energy prices remain constant, and a 17.4% increase in network and distribution costs that comprise 47% of total costs as per the 2010/11 BRCI.
[44] 3.85% = (0.75 x 3.20) + (0.25 x 5.83).
[45] This does not indicate any view of the BRCI for 2012/13, on which the Authority has not yet formed a view.

SKM noted that transport costs are recognised as a significant cost component for chemicals (the cost of transporting chemicals to depots and throughout the distribution network). This is particularly relevant to Unitywater who are located further from the Brisbane logistics and industrial centres.

The amalgamation of the two former council water businesses increases Unitywater's purchasing power. There is potential for Unitywater to achieve efficiency gains or reduce its costs through economies of scale, consolidation of supplier contracts and taking advantage of this increase in purchasing power.

In its review of chemical costs, SKM found that there was insufficient evidence to support the assumption that Unitywater's chemical costs will increase above CPI. SKM therefore found that 3.5% is not a reasonable cost escalation factor, particularly as no efficiency gains or economies of scale have been factored in.

SKM revised the escalation factor for Unitywater's chemical costs down to 2.5% which allows costs to increase in line with the upper end of the CPI bound, offset by a 0.5% gain through efficiencies and economies of scale.

The Authority has also adjusted Unitywater's chemical costs for Frontier's revised demand forecasts (see Table 49).

**Table 49: Revised Chemical Costs ($m)**

| | ***2010/11*** | ***2011/12*** | ***2012/13*** |
|---|---|---|---|
| Water | 1.21 | 1.30 | 1.37 |
| Wastewater | 3.99 | 4.27 | 4.49 |
| **SKM Chemical Costs** | 5.20 | 5.57 | 5.86 |
| **Unitywater Submitted Costs** | 5.20 | 5.44 | 5.70 |
| **Variance** | 0.0% | 2.28% | 2.85% |

*Source Unitywater (2010), QCA (2010)*

Efficiency Gains and Other Amendments

Unitywater's submitted operating costs for 2010/11 did not include any savings from efficiency gains therefore the Authority has sought to impose an efficiency target of 2% in non-bulk operating costs.

The Authority notes that even with these gains for 2010/11, SKM's analysis indicates there remains scope for ongoing efficiency gains to bring Unitywater to the forefront of operating efficiency. The Authority expects that further operating efficiencies in non-bulk operating costs should be achievable over the interim period, of at least 2% per annum.

The Authority has therefore revised its estimates of operating expenditure for these years (see Table 50).

**Table 50: Further Efficiency Gains ($m)**

| | ***2011/12*** | ***2012/13*** |
|---|---|---|
| QCA efficiency target - water | -2.46 | -3.79 |
| QCA efficiency target - wastewater | -3.93 | -6.08 |
| **Total Efficiency Gains** | **-6.38** | **-9.87** |

*Source QCA (2010)*

The Authority notes that Unitywater did not include the Authority's regulatory fees in its operational expenditure forecasts. The Authority has included these regulatory fees in the revised operating costs, allocated on the basis of 2010/11 revenues. In addition to the Authority's fee, the Authority has also amended Unitywater's regulatory and licence fees to include the newly established Queensland Water and Electricity ombudsman fees. Unitywater's revised licence and regulatory fees are presented in Table 51 below.

**Table 51: Revised Unitywater Licence and Regulatory fees ($m)**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Water | 0.42 | 0.49 | 0.52 |
| Wastewater | 0.88 | 0.99 | 1.02 |
| **Revised Total** | 1.30 | 1.48 | 1.54 |
| **Unitywater Proposed** | 0.53 | 0.55 | 0.57 |

Revised Operating Expenditure

The Authority's revised operating expenditure for Unitywater over the interim period for water and wastewater are outlined in Tables 52 and 53 respectively.

For water, the Authority has decreased Unitywater's operating expenditure ($133.81 million) by 0.61% in 2010/11, mainly due to the implementation of efficiency targets.

For wastewater, the Authority has decreased Unitywater's operating expenditure ($93.17 million) by 1.58% mainly due to the inclusion of efficiency targets.

**Table 52: Reasonable Operating Costs - Water 2010-2013 ($m)**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Bulk Water Costs | 75.32 | 94.37 | 113.00 |
| Retail Operating Costs | | | |
| Customer service and billing | 2.64 | 2.74 | 2.84 |
| Regulated demand management costs | na | na | na |
| Community service obligation costs | na | na | na |
| Other Costs | 3.07 | 5.71 | 5.88 |
| Distribution Operating Costs | | | |
| Employee expenses | 16.57 | 17.27 | 17.95 |
| Contractor expenses | 6.29 | 6.45 | 6.63 |
| GSL payments | na | na | na |
| Materials and services (including electricity and chemicals) | 6.49 | 6.81 | 7.10 |
| Licence or regulatory fees | 0.42 | 0.49 | 0.52 |
| Natural resources management costs | na | na | na |
| Corporate costs | 22.98 | 21.59 | 21.87 |
| Indirect Taxes | 0.39 | 0.42 | 0.42 |
| **SKM Total Operating Costs** | **134.17** | **155.84** | **176.19** |
| **Efficiency gains** | **-1.18** | **-2.46** | **-3.79** |
| **Total Operating Costs** | **132.99** | **153.38** | **172.40** |
| **Unitywater Proposed Total** | **133.81** | **154.03** | **176.90** |
| **Variance** | **-0.61%** | **0.42%** | **-2.54%** |

*Source Unitywater (2010), QCA (2010)*

**Table 53: Reasonable Operating Costs - Wastewater 2010-2013**

| | *2010/11* | *2011/12* | *2012/13* |
|---|---|---|---|
| Retail Operating Costs | | | |
| Customer service and billing | 2.83 | 2.94 | 3.04 |
| Regulated demand management costs | na | na | na |
| Community service obligation costs | na | na | na |
| Other Costs | 3.27 | 6.07 | 6.25 |
| Distribution Operating Costs | na | na | na |
| Employee expenses | 26.09 | 27.20 | 28.28 |
| Contractor expenses | 18.20 | 18.71 | 19.25 |
| GSL payments | na | na | na |
| Materials and services (including electricity and chemicals) | 16.77 | 17.97 | 18.82 |
| Licence or regulatory fees | 0.88 | 0.99 | 1.02 |
| Natural resources management costs | na | Na | Na |
| Corporate costs | 25.14 | 23.84 | 24.21 |
| Indirect Taxes | $0.40 | $0.43 | $0.43 |
| **SKM Total Operating Costs** | **93.57** | **98.14** | **101.29** |
| **Efficiency gains** | **-1.87** | **-3.93** | **-6.08** |
| **Total Operating Costs** | **91.70** | **94.21** | **95.21** |
| **Unitywater Proposed Total** | **93.17** | **97.72** | **101.12** |
| **Variance** | **-1.58%** | **-3.59%** | **-5.84%** |

*Source Unitywater (2010), QCA (2010)*

The cumulative impact of the Authority's revision to Unitywater's forecast operational expenditure is a decrease of $16.86 million over the interim period (see Table 54). This represents a decrease of 2.23% on Unitywater's forecasts.

The Authority has adjusted for revised demand forecasts, bulk water prices, regulatory fees, expected efficiency gains, chemical costs and electricity costs, but notes these will be subject to ongoing review in 2011/12 and 2012/13. It is reasonable to expect that Unitywater may realise additional operational efficiencies in the future as it achieves economies of scale. The Authority also notes that there may be opportunities even within the constraints imposed by the SEQ workforce framework.

**Table 54: Comparison of Unitywater's and Authority's operational expenditure for water and wastewater ($m)**

| | *2010/11* | *2011/12* | *2012/2013* | *Total* |
|---|---|---|---|---|
| Unitywater forecast | 226.98 | 251.75 | 278.02 | 756.75 |
| QCA forecast | 224.69 | 247.59 | 267.61 | 739.89 |
| **Difference** | -1.01% | -1.65% | -3.74% | -16.86 |

*Source Unitywater (2010) and QCA calculations*

**Unitywater's forecast operational expenses for 2010/11 are generally reasonable, although the Authority has adjusted for revised demand forecasts, bulk water prices, efficiency gains, chemical costs regulatory fees and electricity costs.**

**The Authority expects that Unitywater may realise operational efficiencies in each year of the interim period as it achieves economies of scale. An additional at least 2% efficiency gains in non-bulk operating costs should also be pursued in 2011/12 and 2012/13.**

## 3.10 Costs

*Introduction*

The Direction requires the Authority to compare the entities' revenues with the Authority's 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;

(c) return of capital, allowing for depreciation of assets over time.

The Direction also requires the Authority to take into account any revenue glide path submitted by the entity for the purpose of avoiding price shocks over the interim period. In its information request to the entities, the Authority required full details of the method used for smoothing and underlying data to be provided.

The impact of recent floods in SEQ has not been taken into account in this Draft Report.

*Unitywater's submission*

Unitywater's initial submission did not include an estimate of total costs for 2009/10 and 2010/11. However, Unitywater's data template provided information on bulk water costs and distribution and retail operating and maintenance costs, and the data to calculate tax, return on capital and return of capital for each activity from 1 July 2008. The Authority has used Unitywater's data template to estimate Unitywater's 2009/10 total costs, for broad comparative purposes. Unitywater provided its forecast of total costs for 2010/11.

Unitywater submitted to the Authority that in comparing other operating costs between 2009/10 and 2010/11, the Authority should acknowledge that there are caveats to comparing projected historic costs for 2009/10 with forecast costs for 2010/11. The Authority notes that Unitywater's 2009/10 costs are estimates based on councils' third quarter budget forecasts.

For example, the council water and sewerage businesses used systems and resources housed in the corporate areas of the councils with the costs allocated to council corporate overheads as opposed to the water and sewerage business units. Unitywater now has to perform these functions as a stand-alone entity and apportion them accordingly, within the business.

Total costs for 2009/10 and 2010/11 are presented in Table 55 below.

**Table 55: Unitywater Total Costs ($m)**

| | ***Costs 2009/10*** | ***%*** | ***Unitywater Costs 2010/11*** | ***%*** | ***Unitywater Water Costs 2010/11*** | ***%*** | ***Unitywater Wastewater Costs 2010/11*** | ***%*** |
|---|---|---|---|---|---|---|---|---|
| Bulk Water Costs [a] | 62.01 | 13.7% | 75.33 | 13.6% | 75.33 | 29.1% | | 0% |
| Distribution and Retail Costs | | | | | | | | |
| Other operating costs [a] | 112.68 | 24.9% | 151.65 | 27.4% | 58.48 | 22.6% | 93.17 | 31.7% |
| + Tax [b] | 17.63 | 3.9% | 9.46 | 1.7% | 3.50 | 1.3% | 5.96 | 2.0% |
| + Return on Capital [b] | 185.23 | 41.0% | 254.89 | 46.1% | 99.66 | 38.4% | 155.23 | 52.8% |
| + Return of Capital [b] | 74.44 | 16.5% | 62.14 | 11.2% | 22.32 | 8.6% | 39.82 | 13.5% |
| **Total Costs** | **451.99** | **100.0%** | **553.47** | **100%** | **259.29** | **100%** | **294.18** | **100%** |

*Notes [a] Data sourced from Unitywater's information template. [b]Data sourced from Unitywater's supporting information. Return on capital in 2009/10 is the sum of interest, dividend payments retained earnings and capital gain..*

*Authority's Analysis*

On the basis of the Authority's analysis of the regulatory asset base, asset lives, cost of capital, and operating and maintenance costs, the Authority has calculated the total costs of carrying on Unitywater's water and wastewater activities for 2010/11 (see Table 56).

In doing so, the Authority has calculated single year or 'unsmoothed' cost estimates, to allow for comparison with Unitywater's revenues and costs, which were predominantly set on this basis.

For water, the Authority's estimate of total costs of $252.39 million is 2.66% lower than Unitywater's proposed costs. For wastewater, the Authority's estimate of total costs of $281.02 million is 4.47% lower than Unitywater's proposed costs.

**Table 56: Comparison of Unitywater and QCA Costs for 2010/11 ($m)**

| | **Water Unitywater Costs** | ***Water QCA Costs*** | ***QCA % of total*** | **Wastewater Unitywater Costs** | ***Wastewater QCA Costs*** | ***QCA % of total*** |
|---|---|---|---|---|---|---|
| Bulk Water Costs | 75.33 | 75.32 | 29.8% | 0 | 0 | 0% |
| Distribution and Retail Costs | | | | | | |
| Other operating costs | 58.48 | 57.67 | 22.8% | 93.17 | 91.70 | 32.6% |
| + Tax | 3.50 | 3.56 | 1.4% | 5.96 | 5.88 | 2.1% |
| + Return on Capital | 99.66 | 94.18 | 37.3% | 155.23 | 146.47 | 52.1% |
| + Return of Capital | 22.32 | 21.66 | 8.6% | 39.82 | 36.97 | 13.2% |
| **Total Costs** | **259.29** | **252.39** | **100.00%** | **294.18** | **281.02** | **100.00%** |

*Source Unitywater data template, supporting information and QCA calculations.*

Key differences between Unitywater's total costs and the Authority's arise from:

(a) other operating costs – the Authority has lower estimates of other distribution and retail operating costs due to efficiency gains and reductions to chemical costs;

(b) tax – the Authority's approach to tax is consistent with that set out in the relevant tax manual for the entities, whereby the value of a contributed asset or the amount of the contribution towards an asset will not be assessable and no deductions of any kind will be allowed in respect of the value of the contributed asset or in respect of the amount of the contribution towards an asset (LGTER 2010);

(c) return on capital – the Authority has a lower WACC of 9.35% compared to the 9.88% proposed by Unitywater. The Authority has a lower cost estimate than Unitywater for water and wastewater.

(d) return of capital – again the Authority has a lower cost estimate than Unitywater for water and wastewater.[46]

## 3.11 Revenues for 2010/11

For price monitoring purposes, Unitywater's revenues as forecast at the time of price setting form the relevant forecast revenues. These revenue forecasts for 2010/11 are consistent with 2010/11 prices.

*Unitywater submission*

Unitywater identified its revenue forecasts for water and wastewater at the time of price setting (see Table 57).

[46] Unitywater had higher depreciation ($74.95m), higher tax ($11.86m) and a lower return on capital ($236.54m). Estimates in their submission reflect more recent information.

**Table 57: Unitywater's 2010/11 Revenue Forecasts for water and wastewater ($m)**

| | ***Unitywater Revenues*** |
|---|---|
| Water | 180.50 |
| Wastewater | 191.78 |
| **Total revenue** | **372.28** |

*Source Unitywater subsequent information*

## 3.12 Comparing Revenues with MARs

Under the 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's estimate of its total costs of carrying on its water and wastewater activities in 2010/11 is presented in Table 58 below (these costs were first identified in section 3.9). Unitywater has chosen a revenue offset approach to the treatment of capital contributions.

A comparison of Unitywater's total costs and Unitywater's revenue forecast (at the time of price setting) is also provided in the table below. This comparison shows under-recovery in both water and wastewater activities, with total under-recovery of $48 million or 11.42%.

Unitywater submitted that its pricing arrangements for 2010/11 were to implement a pricing policy to achieve full cost recovery at or near its best estimate of MAR. However, MAR for FY2011 and subsequent years is subject to the finalisation of some key assumptions, including the opening RAB.

Unitywater acknowledge that for FY2011, the current estimate of MAR is above that anticipated when setting prices. Unitywater's policy in this instance has been to retain the original prices, as announced, and to smooth prices in subsequent years (from FY2012 onwards) so that MAR is achieved over a defined period, on a NPV neutral basis.

**Table 58: Unitywater's 2010/11 Total Costs and Total Revenues ($m)**

| | Water Unitywater 2010/11 | Wastewater Unitywater 2010/11 | Total |
|---|---|---|---|
| Total Costs (Unitywater) | 259.29 | 294.18 | 553.47 |
| - Indexation (Unitywater) | -23.78 | -33.64 | -57.42 |
| - Capital contributions (Unitywater) | -33.01 | -42.76 | -75.77 |
| **Total Costs (Unitywater)[47]** | **202.50** | **217.78** | **420.28** |
| Total Revenues (Unitywater) | 180.50 | 191.78 | **372.28** |
| **Total Revenues - Costs (Unitywater)** | **- 22.00** | **- 26.00** | **-48.00** |
| **Per cent of Total Costs (Unitywater)** | -10.86% | -11.94% | -11.42% |

*Source Unitywater subsequent information*

*Authority Analysis*

A comparison of Unitywater's forecast revenues of its water and wastewater activities with the maximum allowable revenue, based on the Authority's estimate of the total costs of carrying on Unitywater's water and wastewater activities, is provided in Table 59.

The Authority's MAR is unsmoothed and based on 2010/11 total costs, and the revenue offset approach to the treatment of capital contributions is adopted, as per Unitywater's approach.

**Table 59: Comparison of Unitywater's Revenues and the QCA MAR ($m)**

| | *Water Unitywater 2010/11* | *Wastewater Unitywater 2010/11* | *Total* |
|---|---|---|---|
| Total Costs (QCA) | 252.39 | 281.02 | 533.41 |
| - Indexation (QCA) | -25.69 | -39.70 | -65.39 |
| - Capital contributions (QCA) | -33.01 | -42.76 | -75.77 |
| **Total Costs (QCA MAR)** | **193.69** | **198.56** | **392.25** |
| Total Revenues (Unitywater) | 180.50 | 191.78 | 372.28 |
| **Total Revenues – Costs (QCA)** | - 13.19 | - 6.78 | -19.97 |
| **Per cent of Total Costs (QCA)** | **-6.81%** | **-3.41%** | **-5.09%** |

*Source QCA calculations and Unitywater subsequent information.*

The Authority's analysis indicates that, as a whole, Unitywater's revenues lie below the Authority's maximum allowable revenue of $392.25 million by approximately $19.97 million (or 5.09%).

[47] Total costs estimated by Unitywater at the time of price setting were $382.71 million.

Water revenues fall below the MAR ($193.69 million) by around $13.19 million, or 6.81%. Wastewater revenues fall below the MAR ($198.56 million) by around $6.78 million or 3.41%.

As a result of this under-recovery, Unitywater's expected return on capital will fall below the weighted average cost of capital – with an expected return of 8.58% being below the WACC of 9.35%.[48]

## 3.13 Costs, Revenues and Prices

The reconciliation of costs, revenues and average prices is outlined in Table 60 below.

**Table 60: Costs, Revenues and Prices**

| | *Council 2009/10* | *Unitywater Water 2010/11* | *Unitywater Wastewater 2010/11* | *QCA Water 2010/11* | *QCA Wastewater 2010/11* |
|---|---|---|---|---|---|
| Bulk Water Costs ($m) | 62.01 | 75.33 | | 75.32 | |
| Distribution and Retail Costs ($m) | | | | | |
| Other operating costs | 112.68 | 58.48 | 93.17 | 57.67 | 91.70 |
| + Tax | 17.63 | 3.50 | 5.96 | 3.56 | 5.88 |
| + Return on Capital | 185.23 | 99.66 | 155.23 | 94.18 | 146.47 |
| + Return of Capital | 74.44 | 22.32 | 39.82 | 21.66 | 36.97 |
| **Total Costs ($m)** | **451.99** [a] | **259.29** | **294.18** | **252.39** | **281.02** |
| - Indexation | | -23.78 | -33.64 | -25.69 | -39.70 |
| - Capital contributions | | -33.01 | -42.76 | -33.01 | -42.76 |
| **Total Costs (MAR)** | | 202.50 [b] | 217.78 [b] | 193.69 | 198.56 |
| **Total Revenues** | **301.42** | 180.50 [c] | 191.78 [c] | | |
| **Over / (Under) recovery** | | -22.00 | - 26.00 | n/a | n/a |

| | *2009/10 Water* | *2009/10 Wastewater* | *Unitywater Water 2010/11* | *Unitywater Wastewater 2010/11* | *QCA Water 2010/11* | *QCA Wastewater 2010/11* |
|---|---|---|---|---|---|---|
| Total Revenues/MAR ($m) | 142.00 | 159.43 | 180.50 | 191.78 | 193.69 | 198.56 |
| Volume (ML or connections) | 47,146 | 288,607 | 48,722 | 295,098 | 48,722 | 295,098 |
| **Price ($/kL or $/connection)** | **$3.01/kL** | **$552.40** | **$3.70/kL** | **$649.89** | **$3.98/kL** | **$672.85** |

*Notes* [a] *The Authority has not calculated a MAR for 2009/10 as per its Framework Report (April 2010).* [b] *Unitywater costs as per data template and supporting information.* [c] *Unitywater revenues at the time of price-setting. Source QCA calculations and Unitywater subsequent information.*

[48] Expected actual return = (QCA return on capital – under-recovery)/(opening RAB at 1 July 2010 + half the capital expenditure). For Unitywater: 8.58% = (240.64 – 19.97)/2,573.07.

## 3.14 Findings

For Unitywater:

(a) average retail water and wastewater prices in 2010/11 increased by 23.0% and 17.7% respectively. These increases fall below those that would achieve full cost recovery in 2010/11 (32.0% and 21.8%);

(b) residential bills for households using 200kl of water per year and one pedestal, increased by differing amounts depending upon council area, with increases of between 9.6% to 36.2%;

(c) bulk water costs account for 29.1% of Unitywater's proposed total water costs in 2010/11. Other retail and distribution operating costs account for 22.6%, return on capital accounts for 38.4%, tax for 1.4% and return of capital 8.6%;

(d) for wastewater, retail and distribution operating costs account for 31.7% of Unitywater's proposed total costs, return on capital accounts for 52.8%, tax for 2.0% and return of capital 13.5%;

(e) the most significant increases in proposed costs in 2010/11[49] relate to a 34.6% increase in retail and distribution operating costs, and a 21.5% increase in bulk water costs. There is an 11.7% increase in the return on capital (based on a comparison of councils' interest, dividend payments and retained earnings to the entity's proposed return on capital after taking into account the forecast under-recovery in 2010/11 of total costs).

The Authority's estimate of the costs of supply in 2010/11 is 3.61% lower than Unitywater's. In this regard:

(a) Unitywater's forecast water revenues ($180.50 million) for 2010/11 fall below the MAR ($193.69 million);

(b) Unitywater's forecast wastewater revenues ($191.78 million) for 2010/11 fall below the MAR ($198.56 million).

(c) as a whole, Unitywater's revenue of $372.28 million falls below the MAR of $392.25 million calculated by the Authority.

[49] As previously noted, the Authority has not reviewed costs for 2009/10.

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# APPENDIX A: MINISTERIAL DIRECTION

**QUEENSLAND COMPETITION AUTHORITY ACT 1997**
**Section 23A**
**MINISTERS' DIRECTION NOTICE**

**Direction**

As the Premier and the Treasurer of Queensland, 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 2010 to 30 June 2013 (the interim regulatory period).

**Conduct of the QCA pursuant to this Direction**

In referring this investigation, the Ministers 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 annual increase in water and wastewater prices, including distinguishing the bulk and distribution/retail components to the extent that it is possible given the availability and reliability of relevant information;

(b) provide guidance to entities on the application of the information requirements referred to in (j) below;

(c) 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;

(d) 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;

(e) accept the operational constraints imposed by the SEQ Urban Water Arrangements Reform Workforce Framework 2010;

(f) monitor the revenues of each activity having regard to the maximum allowable revenue over the interim regulatory period, based on the total 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.

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(g) consider a weighted average cost of capital (WACC) within a reasonable range of values for 2010-11. The QCA is to advise the entity by 1 March 2011 and 1 March 2012 of the WACC benchmark that it will consider in 2011-12 and 2012-13 respectively;

(h) 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 take into account the latest available Australian Bureau of Statistics Consumer Price Index (all groups, Brisbane), however, for the period 1 July 2009 to 30 June 2010, the 2009-10 Queensland State Budget inflation forecast may be used;

(i) take into account any revenue glide path submitted by the entity for the purpose of avoiding price shocks over the interim period; and

(j) monitor according to the QCA Final Report on the SEQ Interim Price Monitoring Framework (April 2010) and Information Requirements for 2010-11 (December 2009), 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**

For 2010-11, the entities must provide their price monitoring information returns to the QCA by 31 August 2010. For each subsequent year, the entities must provide their price monitoring information returns to the QCA by 1 July.

The QCA must provide a Final Report to the Ministers and the Minister for Natural Resources, Mines and Energy and Minister for Trade as follows:

a) for 2010-11, by 31 March 2011; and

b) for 2011-12 and 2012-13, by 31 December respectively.

[redacted]

**ANNA BLIGH**
Premier
Minister for the Arts

[redacted]

**ANDREW FRASER**
Treasurer
Minister for Employment
and Economic Development

# APPENDIX B: WEIGHTED AVERAGE COST OF CAPITAL

## B.1 Introduction

Under the Ministerial Direction, the Authority must consider a WACC within a reasonable range of values for 2010/11.

The entities jointly engaged Competition Economists Group (CEG) to provide advice on WACC parameter values. As a result, there are common WACC parameter values across the entities' submissions.

Two entities (Allconnex and Unitywater) proposed a WACC of 9.88% (nominal post-tax) – the mid-point of the CEG recommended range. QUU proposed a WACC of 10.25% – adopting many of the CEG parameter values and varying others to align with recent Authority decisions.

The Authority notes that in actually setting prices (revenues) Allconnex used a WACC of 9.12%, Unitywater used 8.44% and QUU used 9.2%. However, this appendix focuses on the parameters and values proposed by the entities for the Authority to use in calculating its MAR for price monitoring.

Therefore, for clarity and to avoid repetition, the Authority has set out its detailed analysis of the entities' proposed WACC parameters and values in this appendix, in accordance with its standard approach. The analysis is this appendix is relevant to all entities.

In undertaking this analysis, the Authority engaged Dr Martin Lally to provide specialist advice to the Authority and to apply the Authority's standard approach.

## B.2 General Approach

The Authority's general approach is to estimate a nominal post-tax WACC using the Officer (1994) WACC3 model. This approach defines cash flows in nominal, post-tax terms and modifies the cash flows, as opposed to the discount rate, for the debt interest shield and tax, where the latter reflects the effects of dividend imputation.

Given these cash flow adjustments, the WACC3 is:

$$WACC = k_e(1-L) + k_d L$$

where L is the firm's leverage (i.e. debt to total value), $k_e$ is the cost of equity and $k_d$ is the cost of debt. The cost of equity is estimated using the Officer (1994) version of the Capital Asset Pricing Model (CAPM) where returns are defined to include dividend imputation credits to the extent that they are usable. The cost of debt is defined as the promised yield and is estimated as the sum of the risk-free rate and an appropriate debt margin.

The Authority also uses the Conine beta levering formula, which incorporates the imputation-adjusted corporate tax rate and an estimate of the debt beta, to convert the equity betas of comparable firms into an asset beta, and, in turn, to convert the asset beta to an equity beta for the firm in question.

*Stakeholder Submissions*

All three entities estimated a nominal post-tax WACC using CAPM. QUU used the Conine beta levering formula. Allconnex and Unitywater relied on CEG analysis which referred to the Conine formula.

*Authority Analysis*

The Authority accepts the approach proposed by the entities for the interim price monitoring period. Whether this approach should apply in price determinations to apply from 1 July 2013 will be investigated over the interim period.

## B.3 Risk-free Rate

The risk-free rate represents the rate of return on an asset with zero default risk.

Under the Authority's current approach, the risk-free rate is based on a 20-day average yield of nominal Commonwealth Government (CGS) bonds whose maturity is matched to the term of the regulatory period. The Authority proposed this approach in its December 2009 Draft Decision on QR Network's December 2009 Draft Access Undertaking, and subsequently refined and finalised it based on technical advice from Dr Lally in its June 2010 Draft Decision on QR Network's June 2010 DAU - Tariffs and Schedule F, which forms part of the 2010 undertaking approved in October 2010. The Authority again applied this approach in its June 2010 Final Report on the Gladstone Area Water Board.

The basic rationale for matching the term of the bond to the term of the regulatory cycle is that it satisfies the fundamental principle of regulation that the net present value of expected future cash flows should equal the initial investment (Lally 2004). This principle is equivalent to the statement that the maximum allowable revenue should cover the firm's efficient costs, including the cost of capital.

*Stakeholder Submissions*

While QUU agreed that the risk-free rate should be based on a 20-day averaging period, it argued that the term of the Commonwealth bond rate should be ten, rather than five, years. In QUU's view, using a 10-year rate better reflects the long-run rate of return expected by shareholders, is consistent with a 6% market risk premium, and represents commonly accepted regulatory practice. For these reasons, QUU submitted a 10-year risk-free rate of 5.43%, based on an averaging period from 7 May 2010 to 3 June 2010.

QUU also provided advice from PwC on the WACC and underlying parameter values. PwC agreed with QUU's use of a 10-year term for the risk-free rate, for similar reasons. PwC also argued that the majority of commercial valuers use a 10-year term for the risk-free rate when applying the CAPM in discounted cash flow (DCF) valuation.

PwC also critiqued the Authority's recent decision to match the term of the risk-free rate to the term of the regulatory period on the basis that:

(a) Dr Lally's result relies on the assumption that the term structure of interest rates is *fully* explained by the pure expectations hypothesis; that is, an upward sloping yield curve implies an expectation of higher future interest rates and not a term premium. As the Reserve Bank of Australia has stated that the pure expectations hypothesis is not suffic*ient* to explain the term structure of interest rates, PwC argued that the QCA does not have a basis for excluding it from the risk-free rate;

(b) Dr Lally's result requires that investors in regulated firms are able to sell their shares at the end of the regulatory period for an amount equivalent to the equity component of the RAB and such a result is not guaranteed, as estimates of future costs and volumes might be in error; and

(c) while invoking a 5-year risk-free rate would lower the cost of equity by 30 basis points, this would possibly be offset by an increase in the market risk premium (MRP) to 6.3%.

Allconnex and Unitywater have relied on CEG's analysis of the risk-free rate and its recommended rate of 5.65%. This rate was estimated on the basis of a 5-year averaging period, rather than 20 day average, and on the basis of 10-year Commonwealth bond yields.

CEG argued that a long term average is required as the prevailing risk-free rate is unusually low, as during periods of economic crisis, the ensuing rush to the safety of government bonds depresses yields on those bonds. CEG stated that use of the prevailing risk free-rate (in conjunction with a historical MRP) will therefore underestimate the current cost of equity. CEG further argued that estimating the risk-free rate using a historical average is consistent with estimating the MRP using a historical average. CEG acknowledged its recommended approach was a departure from Australian regulatory practice.

*Authority Analysis*

The Authority notes there are two main aspects to the entities' submissions: the term of the benchmark bond; and the duration (including the end date) of the averaging period.

The Term of the Benchmark Bond

As explained in its previous reports, in the past the Authority has estimated the risk-free rate with reference to the yield on 10-year Commonwealth bonds. However, in doing so the Authority questioned the appropriate term of the benchmark bond on the basis that it will tend to under or over-compensate the regulated business depending on the term structure of bond yields.

In this regard, it has been argued that the risk-free rate should be set with reference to the length of the regulatory period. This satisfies the principle that the net present value of expected future cash flows should equal the initial investment (i.e. the 'NPV=0' rule). That is, the maximum allowable revenue over the regulatory period should allow for efficient costs to be recovered. While the Authority had in the past recognised the conceptual soundness of this argument, the Authority accepted the use of a 10-year rate as the 5-year and 10-year differential was not material.

However, with differences between these bonds now being material, the Authority reviewed its past practice and considered that it should adopt the more appropriate term of the benchmark bond. This approach was proposed by the Authority in the QR Network December 2009 Draft Decision and subsequently refined in its QR Network June 2010 Draft Decision. The finalised approach has also been implemented in the context of the Authority's recent GAWB decision.

The essential point is that the term of the risk-free rate should be set equal to the term of the regulatory cycle in estimating both the cost of equity and cost of debt in order to satisfy the NPV=0 rule. However, in the presence of material and significant refinancing risk (i.e. the benchmark average term of debt exceeds the term of the regulatory cycle), the regulated firm will require compensation in order to implement swap contracts to match the interest and credit elements of the benchmark cost of debt to the regulatory cycle. Importantly, and regardless of the presence (or not) of refinancing risk, the term of the risk-free rate in both the cost of equity and the cost of debt should be set equal to the regulatory cycle. (The risk-free rate in the MRP is dealt with separately below.)

Dr Lally rejected PWC's arguments on the basis that:

(a) setting the term of the risk-free rate equal to the term of the regulatory cycle does not depend on the pure expectations hypothesis fully characterising the term structure of

interest rates. Rather, his references to this hypothesis only give intuition for the results and do not underpin the fundamental conclusion;

(b) even if the market value of the firm diverges from the RAB due to estimation errors in costs and volumes, such estimation errors cannot be mitigated by an alternative choice for the term of the risk-free rate and importantly, any alternative term is likely to aggravate any divergence from the NPV=0 requirement and therefore should be rejected; and

(c) no adjustment to the estimate for the market risk premium is warranted because of the estimation difficulties in doing so and the lack of clear evidence in support of the need to make such an adjustment.

The Authority has already undertaken a comprehensive review of this issue in its June 2010 QR Decision and concluded that the term of the risk-free rate should be set to the term of the regulatory period. In considering stakeholder arguments and Dr Lally's responses in the context of this review, the Authority has not found stakeholders' arguments compelling to move away from the Authority's current approach in setting the term of the risk-free rate.

Interim price monitoring is for a three year period, from 1 July 2010 to 30 June 2013. While Dr Lally recommended that the term of the regulatory period should match annual price setting by the entities, the Authority prefers a three year term, after taking into account the need to minimise regulatory and compliance costs under light-handed price monitoring.

Therefore, application of the Authority's approach to interim price monitoring requires the risk-free rate to be estimated with reference to the yields on three-year Commonwealth bonds. This approach would allow the WACC for interim price monitoring to 1 July 2013 to be determined in this review.

Duration of the Averaging Period

Dr Lally noted that CEG's approach involves estimating the risk-free rate using an averaging period of five years, rather than the standard practice of using a short period immediately before the regulatory period (i.e. 5-40 business days).

Dr Lally advised that standard practice should be adopted because it avoids ad-hoc judgements about when to depart from it and which historical period to use when doing so, and it avoids an upward bias to WACC from acting in this way when it favours the regulated firm. Furthermore, Dr Lally stated that there was no clear evidence that the current risk-free rate is unusually low.

The Authority, along with other regulators, has the long-held view that the most recent observations of the risk-free rate provide the most relevant information for a forward-looking estimate. However, the Authority also understands that this consideration should be balanced against the possibility of the occurrence of an abnormal event. As a result, the Authority considers that a 20 trading day averaging period remains appropriate as it balances these two considerations.

For interim price monitoring for 2010/11, the latest possible end date for this averaging period is 30 June 2010, which is Dr Lally's preferred end date as it provides the most up to date information for determining prices from 1 July 2010. However, the Authority notes that the entities have referred to an end date of 3 June 2010 on the basis of CEG's advice.

The Authority notes that to implement prices from 1 July 2010 the entities would need to decide on future prices in advance, in order to inform stakeholders and to implement this decision in their billing systems. To decide on future prices in advance of their application necessarily requires a WACC to be determined before prices are applied. Consistent with light-handed price monitoring, and the realities of administering price changes, the Authority has adopted the

entities' proposed end date of 3 June 2010. Nonetheless, results using the alternative date are also presented for comparison purposes.

Summary

The Authority considers that the risk-free rate should be based on the yield on three-year Commonwealth bonds averaged over 20 trading days.

The rate as at 3 June 2010 (4.91%) is reasonable as the entities must determine the WACC prior to 2010/11 prices being applied from 1 July 2010. For information, the rate as at 30 June 2010 (4.76%) uses the latest available information prior to the start of the regulatory period on 1 July 2010.

## B.4 Market Risk Premium

The MRP represents the premium that investors require to accept covariance risk associated with investments relative to the return provided by a risk-free asset. The Authority has typically adopted a MRP of 6% based on considering a range of methodologies.

*Stakeholder Submissions*

QUU proposed an MRP of 6%, based on standard regulatory precedent. QUU stated a 6% MRP is based on the use of 10-year bonds to estimate the risk-free rate. QUU provided advice from PwC that a MRP of 6% is consistent with most regulatory precedents in Australia, is appropriate at this time, and is the value applied by PwC valuation practitioners.

QUU noted that the use of a MRP of 6.5% by the Australian Energy Regulator was the result of a specific set of circumstances.

Allconnex and Unitywater have relied on CEG's analysis of the MRP. CEG recommended a conservative estimate of the MRP is the AER's (2009) estimate of 6.5%, as a forward looking MRP should be higher due to the global financial crisis and in this context estimated a forward-looking value of 12% as at January 2009.

*Authority Analysis*

The Authority has previously acknowledged that estimating the MRP is difficult (QCA 2010a, b), as all methods suffer from limitations. As a result, the Authority draws on a range of valid methods in determining an estimate.

Historical averaging methods (using a 10-year risk-free rate) produce MRP estimates ranging between 5.27% and 6.99% while forward looking measures and surveys range between 3.66% and 6%. The median of the estimates was 5.84% and the average was 5.63%.

In response to QUU's comment that a 6% MRP is based on the use of 10-year bonds to estimate the risk-free rate, the Authority notes that it has also estimated the MRP using 5-year bonds. The effect is to increase the Authority's median estimate of the MRP from 5.84% to 5.94%. Adopting a 5-year risk free rate would not change the Authority's estimate from 6%.

Given the three year term of the interim price monitoring period, the Authority has now also compared its previous estimates with those resulting from the use of 3-year bonds. The effect is to increase the Authority's average estimate from 5.63% (using 10-year bonds) to 6.00% (using 3-year bonds) and the median from 5.84% to 6.33%. Given the upward bias of the estimation techniques (e.g. Ibbotsen historical averaging), and the standard error of the estimates, the Authority considers that adopting a three-year rate would not change the estimate from 6%.

Further, the Authority notes that Dr Lally has advised that the term of the risk free rate in the first term of the CAPM and implicit in the MRP do not need to match (Lally 2010a, 2010c). Dr Lally has advised that the risk-free rate in the first term of the CAPM should reflect the term of the regulatory period whilst that used in estimating the MRP should reflect the across-investor average period between successive portfolio reassessments. Plausible estimates for the latter range from 1-10 years.

In response to CEG's proposed MRP of 6.5%, Dr Lally argued that in order to justify a higher estimate of the market risk premium, the across-investor average period between successive portfolio reassessments would have to be judged to be significantly below five years (e.g. 1 year). However, Dr Lally does not favour such adjustments to the MRP because they are arbitrary due to estimation difficulties and will impart an upward bias to WACC estimates because these adjustments are limited to periods in which they would raise WACC.

Drawing on all the above, the Authority does not support the CEG estimate of 6.5%, which refers to the AER (2009) decision. The AER made this change given its concerns at that time of the effect of market instability resulting from the global financial crisis. The Authority is not proposing to adopt the AER's decision on the basis that:

(a) the Authority's analysis indicates that 6% is reasonable using 10-year, 5-year and 3-year terms for the risk-free rate;

(b) any adjustments made to the MRP to accommodate short term market fluctuations are inherently subjective both in the scale of the adjustment and the period over which the would need to be subsequently reversed; and

(c) increasing the premium now would be inconsistent with past practice that sets the MRP at a level to encourage investment over the medium term and not in response to short term fluctuations.

The Authority considers that the WACC for SEQ price monitoring should be based on a MRP of 6%.

## B.5 Capital Structure and Credit Rating

Capital structure and credit rating are two related inputs into the assessment of WACC.

The Authority adopts a benchmark capital structure which refers to the relative weights of debt and equity that finance the regulated entity's asset base. In doing so, the Authority seeks to ensure the capital structure is efficient but allows the business to vary its actual capital structure if the firm believes there are resulting advantages.

The Authority's assessment of the credit rating is based on the benchmark capital structure. Although the rating itself is not a direct input into the WACC calculation, it is used to assess an appropriate debt margin.

*Stakeholder Submissions*

All three entities proposed a capital structure of 60% debt and 40% equity and proposed a BBB+ credit rating, as recommended by CEG. CEG noted that, notwithstanding the QCA's assumption of 50% gearing for the Gladstone Area Water Board, standard regulatory practice is to assume 60% debt and a credit rating of BBB+.

QUU provided advice from PwC which stated that QUU gearing of 60% and a BBB+ credit rating is consistent with market evidence for regulated energy businesses in Australia and regulatory precedent for energy and water businesses. PwC stated that the Authority's decision

for GAWB's gearing arises from materially different business circumstances, namely concentrated and potentially unstable industrial demand. The Authority notes that these factors do not apply to a typical urban water business.

*Authority Analysis*

Capital Structure

Dr Lally noted that relevant comparators for the capital structure of the SEQ entities are stand-alone efficient private sector firms in the water business or other monopoly providers of essential services, who must also be listed in order to obtain market value leverages. Dr Lally noted that the relevance of foreign listed water businesses should be considered with caution due to cross-country differences in the factors affecting firms' leverage decisions, including country differences in the treatment of bankruptcy.

Dr Lally also considered that the SEQ businesses can be differentiated from GAWB. Specifically, Dr Lally noted that PwC (2009) favoured a lower leverage of 50% for GAWB than the regulatory norm of 60%, due to GAWB's greater exposure to demand and weather-related risks than metropolitan water businesses. However, as the SEQ water businesses are metropolitan water businesses, this concern therefore does not arise.

Dr Lally concluded that the best available comparators could be drawn from the AER (2009) decision, where average market leverage amongst Australian gas and electricity network businesses over the period 2002-2007 was examined. The average leverage for 2007 was 59% and the average over the 6-year period was 62% (AER 2009, Table 5.3).

Dr Lally updated the leverage data for these firms and found their current market leverages ranged from 57% to 79%, with an average of 67%. Mindful that firms experience short term fluctuations around their optimal leverage, Dr Lally considered that the available data pointed to an optimal leverage of about 60%.

Taking into account these considerations, the Authority considers that gearing of 60% debt is appropriate.

Credit Rating

For any given business, credit ratings principally depend on leverage. The appropriate credit rating for the SEQ entities is that of a stand-alone efficient private sector firm in the water business or other monopoly providers of essential services, given a market leverage of 60%.

Dr Lally noted that the best groups of available comparators to determine benchmark credit ratings are the Australian gas and electricity network businesses referred to above. Credit ratings were available for three firms with ratings of A- (at 65% leverage), BBB- (73%) and BBB- (79%). Dr Lally considered that this data suggested that the average credit rating for these privately-owned firms with market value leverage of 60% would likely be BBB.

The Authority notes that one entity has provided it with a copy of some of its actual debt obligations, some of which correlate with a BBB+ rating. However, the Authority notes that it benchmarks against relevant efficient comparators and does not consider actual debt obligations or the actual credit ratings of regulated entities.

Given these considerations, the Authority considers that a credit rating of BBB is appropriate.

## B.6 Debt Beta

The debt beta is a measure of the covariance risk between the firm's debt returns and the market portfolio. However, in contrast to equity returns, debt returns are less amenable to estimation, as corporate debt is not frequently traded (although these problems can be overcome). As a result, the Authority has previously estimated the debt beta by taking the the midpoint of its lower (i.e. zero) and upper bounds (i.e. the ratio of the debt margin to the MRP).

This approach was considered to be a reasonable compromise, as previous empirical evidence indicated that the debt beta was greater than zero but materially less than the upper bound, as the latter impounds non-covariance elements, such as compensation for expected default losses and for the inferior liquidity of corporate bonds to government bonds.

In the wake of the global financial crisis (GFC), debt margins ballooned to historically high levels that, under the Authority's 'midpoint approach' resulted in unreasonably high estimates of the debt beta. For example, a debt margin of 420 bp and a MRP of 6% yield an upper bound of 0.70 and, therefore, a midpoint of 0.35 for the debt beta. Given that the increases in debt margins witnessed during the GFC are likely to have involved increases in the non-covariant components of debt (e.g. higher expected default losses), the Authority maintained its estimates of the debt beta for QR Network and GAWB at their previous levels.

In any event, and importantly, the Authority has also noted that, as long as the same value of the debt beta is applied consistently in the de-levering and re-levering process, the effect on the target equity beta should not be material, as long as the difference between the leverage of the comparators is not substantially different from the leverage of the target firm.

*Stakeholder Submissions*

QUU submitted a debt beta of .11 should be applied, consistent with that previously recommended by the Authority for GAWB. QUU noted that the GAWB report identified that abnormally high debt betas resulted when the current high debt margins were applied in the standard formula.

QUU provided advice from PwC which stated that it is not appropriate to apply a debt beta that is currently implied by the high debt risk premium using the formulaic estimation approach, in combination with previously estimated asset betas. Further, PWC argued that there is no credible empirical evidence for a significant positive debt beta, and that commercial valuation specialists ignore it.

Allconnex and Unitywater did not explicitly identify a debt beta, but have, in general, relied on CEG's analysis, which invokes a debt beta of 0.11.

*Authority Analysis*

Dr Lally noted that the Authority's current approach of retaining its previous debt beta estimates implicitly assumes that the increase in debt margins since 2005 is attributable to non-beta factors.

Dr Lally considered an alternative approach would be to estimate debt betas by regressing corporate debt returns on market returns. He cited US studies that estimate debt betas for high grade and BBB bonds ranging from 0.02 to 0.04 (Cornell and Green 1991, and Schaefer and Strebulaev 2007). As a result, Dr Lally considered that these estimates suggest a debt beta of 0.11 is too high. However, at the same time, Dr Lally also agreed with the Authority that as long as the same value of the debt beta is applied consistently in the de-levering and re-levering

process, the effect on the target equity beta should not be material. Therefore, on balance, Dr Lally recommended that the debt beta be set to zero.

In reviewing this issue, the Authority acknowledges that estimating the debt beta using a formulaic approach (e.g. the midpoint approach) can generate artificially high estimates given abnormally high debt margins. It is for this reason that the Authority did not increase the debt beta in its recent reviews of QR Network and GAWB.

At the same time, the Authority has not previously accepted proposals for a zero debt beta on the basis that debt typically has a positive covariant component. In terms of a positive but lower value than 0.11, while Dr Lally has cited a range of 0.02-0.04 based on US data, the Authority considers it would be premature to adopt a value in this range without further study. A relevant consideration in this regard is that applying these studies to Australian data might not produce the same range.

Moreover, the Authority notes that the entities and CEG have all proposed a debt beta of 0.11, and have not offered alternative estimates.

Importantly, as noted above, as long as the same value of the debt beta is applied in the de-levering and re-levering process and the difference between the leverage of the comparators is not substantially different from the leverage of the target firm, the effect of the debt beta on the resulting equity beta is minimal. In this latter regard, the Authority notes that leverage differences are typically small between regulated firms and relevant comparators.

Therefore, the Authority finds that an appropriate value for the debt beta is 0.11 - pending further work in this area.

## B.7 Asset and Equity Betas

The asset beta measures the business risk arising from the covariance, or sensitivity, of a firm's returns relative to the market's returns. However, asset betas are not directly observable and must be derived from observable equity betas. The equity beta reflects both the business risk associated with holding an investment and the financial risk borne by equity holders from the use of debt to finance that investment.

*Stakeholder Submissions*

QUU submitted that there is no evidence that urban water has a systematic risk that is less than energy and in earlier electricity distribution decisions and in the recent QR decision asset betas of 0.45 have been applied. QUU proposed an asset beta of 0.43, which corresponds to an equity beta of 0.84, using the Conine formula and 60% gearing, 0.11 debt beta, and a gamma value of 0.5.

QUU provided advice from PwC which noted that, while QUU's equity beta of 0.84 (at 60% gearing) is slightly higher than the value PwC previously recommended for an urban water business, it is within the plausible range given the estimation error.

PwC stated that QUU's proposal is consistent with the proposition that water and energy businesses have similar levels of systematic risk (accepted by a number of regulators) and a belief that the AER's energy equity beta of 0.8 is correct (which is not consistent with the Authority's previous decisions to apply an equity beta of range of 0.9 to 1.10 for energy).

PwC also stated that while the Authority adopted an equity beta equivalent to 0.77 for GAWB (at 60% gearing) an equity beta of 0.84 is not significantly different, given the errors inherent in beta estimation.

Allconnex and Unitywater have relied on CEG's analysis of the equity beta. CEG recommended that the equity beta should be between 0.8 and 1.0. The lower bound of 0.8 is taken from the AER (2009) which refers to analysis by Henry (2009). The upper bound is based on an examination of returns on six regulated firms relative to the market from January 2008 to March 2009 and beta estimates over the eight month period from November 2008 to June 2009.

Allconnex and Unitywater adopt the mid-point of the CEG range: i.e. an equity beta of 0.9.

*Authority Analysis*

Dr Lally noted that in choosing suitable comparator firms, the choice is limited to listed firms (by the need for market data to estimate equity betas) and should reflect consideration of the factors that underlie them. Lally stated that these factors comprise: the income elasticity of demand for the product, the nature of the customers, pricing structure, duration of contracts, nature of regulation, degree of market power, extent of real options, degree of operating leverage, and market weight.

Dr Lally stated that for metropolitan water business, other such water businesses as well as gas and electricity networks would be similar in terms of the relevant factors of the income elasticity of demand (low), the nature of the customers (local rather than foreign and individuals rather than businesses), the degree of market power (high), extent of real options (low), degree of operating leverage (high), and market weight (low). In relation to pricing structure, the Authority notes that SEQ water businesses obtain a large proportion of their revenues from fixed access charges (which apply to water and wastewater services), which would lessen their sensitivity to the business cycle.

However Dr Lally noted that among such entities there are significant variations in terms of the form of regulation.

Revenue caps protect firms against output (demand) shocks because costs are largely invariant to output. Firms are largely protected against cost shocks because of the right to apply for regulatory reset in response to unforeseen events, and systematic cost shocks are by their nature unforeseeable. Dr Lally considered that these features suggest that firms would have very low exposure to systematic risks and therefore a very low asset beta. Revenue caps apply to electricity transmission and some electricity distributors. Ofwat has applied a revenue corrected price cap (with an unders and overs adjustment in the following pricing period) to regulated UK water firms and many customers are unmetered which essentially translates to a revenue cap arrangement.

As price caps expose firms to demand risks, Dr Lally stated that the betas of price capped firms should be larger than those of revenue capped firms. He then noted that under rate of return regulation, prices are set consistent with actual costs, and prices are reset if the actual rate of return deviates from the prescribed rate. US water companies are subject to this regime.

Noting that the SEQ entities are subject to price monitoring, Dr Lally noted that commercial prudence would incline them to raise prices in response to upward cost shocks, while their monopoly power would permit them to do so. Fear of price control would incline them to reduce prices in response to downward cost shocks. Thus, the SEQ firms should have asset betas above revenue capped firms, less than price capped firms, and similar to rate of return regulated firms. Estimates from all these regimes are therefore useful.

Asset betas were calculated by Dr Lally for a range of firms, by de-levering raw equity betas using the firm's leverage coupled with a debt beta of 0.11 and relevant tax rates (Table B.1). In doing so, Dr Lally translated estimates from previous studies by PwC (2009) and Henry (2009) into comparable data for this review.

**Table B.1: Estimated Asset Betas**

| | *No. of Companies* | *Data Period* | *Asset Beta* |
|---|---|---|---|
| UK water companies | 3 | 2004-2009 | 0.22 |
| US water companies | 9 | 2004-2009 | 0.38 |
| Australian energy network companies | 9 | 2002-2008 | 0.30 |
| US electric utilities | 11 | 1990-1998 and 2002-2008 | 0.37 |
| *Mean* | | | *0.32* |
| ***Mean excluding UK water companies*** | | | ***0.35*** |

*Source Lally 2010.*

In analysing these estimates, Lally noted that:

(a) Australian estimates should be favoured, as foreign estimates are estimated with reference to a foreign market index, which may differ in its leverage and industry composition from that of Australia, and these differences can affect beta values;

(b) estimates for longer periods are more reliable, and this favours the US estimates drawing on data from 1990 to 2008;

(c) estimates for larger numbers of firms are more reliable, and this favours all but the UK water company estimates; and

(d) estimates for firms subject to a regulatory regime most closely resembling the SEQ entities are preferred, and this favours all but the UK water company estimates.

Taking all these factors into account, Lally recommended the UK companies be given the lowest weight. If they are disregarded, the mean asset beta is 0.35. Dr Lally stated that this estimate warrants extrapolation to the SEQ entities.

In response to the remaining issues proposed by the regulated entities (and CEG), Dr Lally noted that:

(a) empirical evidence should prevail over references to previous regulatory decisions;

(b) the AER decision to lower the equity betas for regulated energy networks to 0.8[50] (forming CEG's lower bound) was above that suggested by the empirical evidence available to the AER, and the AER noted that its decision was taken in the interest of 'regulatory stability'; and

(c) CEG's upper bound for the equity beta of 1.0 is based on data over a period of eight months, and betas estimated over such a short period will have little statistical precision. In addition, CEG makes no adjustment for leverage differences, and the period appears to be chosen because it generates a high estimate. By contrast, Henry (2009) uses a period of 16 years to estimate betas for the US electric utilities, and the shortest period used in any of the relevant studies in Table B.1 is 5 years.

[50] The AER equity beta of 0.8 at leverage of 60% implies an asset beta of 0.41

Drawing on all the above, the Authority considers that an asset beta of 0.35 is appropriate, which corresponds to an equity beta of 0.66 at 60% gearing.

## B.8 Cost of Debt

The cost of debt is the promised yield on it. It is expressed as the sum of the risk-free rate and an appropriate debt margin.

*Stakeholder Submissions*

QUU proposed a cost of debt of 10.11%, with a debt margin of 4.68%, comprising a debt margin of 455 basis points and an annual debt raising cost of 12.5 basis points. In estimating this margin, QUU adopted the 7-year BBB Bloomberg estimate and extended it to 10 years by extrapolation; that is, by adding the 10-year to 7-year AAA yield differential. The margin was estimated over the 20 days to 3 June 2010.

QUU provided advice from PwC which stated that the cost of debt should be calculated using 10-year BBB+ fixed rate Australian debt. PwC noted it has found the CBA Spectrum curve tends to become less reliable, and is likely to underestimate actual bond yields at longer terms than the limit of the data, which is currently 6 years for a BBB+ rated bond. PwC noted that in September 2010 the Commonwealth Bank temporarily suspended the CBA Spectrum service following internal review. PwC concurred with the Authority's previously expressed view that the CBA Spectrum debt risk premium underestimates the premium expected between debt terms of 5 and 10 years.

PwC noted that it now applies the Bloomberg BBB debt risk premium at 6 years, as there are currently no BBB data points beyond 6 years, plus the rise in the Bloomberg AAA curve from 6 to 10 years. PwC noted that its approach results in a 4.52% debt margin (inclusive of 12.5 basis points for debt raising costs) that is not materially different from that proposed by QUU of 4.68%.

Allconnex and Unitywater have relied on CEG's analysis of the cost of debt. CEG recommended a cost of debt of 8.79% (with a risk-free rate of 5.65% and therefore a debt margin of 3.14%), estimated using:

(a) 10-year debt – as long-lived infrastructure businesses near universally issue debt with a maturity of 10 years or greater;

(b) averaging over the CBA Spectrum and Bloomberg data service; and

(c) equally weighting the prevailing cost of debt and the average cost of debt over the last five years.

*Authority Analysis*

In assessing the efficient cost of debt, the Authority acknowledges that firms subject to a fixed regulatory cycle might issue longer-term debt, due to refinancing risk. Refinancing risk is not a matter to be resolved through in-principle arguments but with reference to empirical evidence of relevant comparators.

In considering the relevant benchmark term of debt, the Authority has sought market information regarding the average debt term of relevant comparators. In this regard, Dr Lally noted that in a recent report for the Authority, PwC (2010) concluded that a benchmark 10-year term was appropriate for the Gladstone Area Water Board, based on evidence provided by regulated businesses to the AER and debt market activities to May 2010. Consistent with this

advice, Dr Lally considered that the 10-year benchmark term of debt is also relevant for the SEQ distribution and retail entities.

The Authority accepts this advice and notes that it is consistent with the CEG's position that infrastructure businesses issue 10-year debt.

Dr Lally has previously advised (April 2010) that it would be efficient debt policy for a firm in this situation (i.e. with a benchmark average term of debt exceeding the term of the regulatory cycle) to undertake swaps to convert the firm's schedule of debt to one that aligns with the regulatory cycle. As such, the regulator should compensate the firm for these costs, just as it covers insurance premia for efficiently managing other business risks. The Authority has previously accepted this approach.

Specifically, in his previous advice, Dr Lally demonstrated that a regulator can still satisfy (or closely approximate) the NPV=0 principle even when the average term of debt exceeds the regulatory term provided that:

(a) the term of the risk-free rate in the cost of debt matches the term of the regulatory cycle;

(b) swap contracts can convert the firm's schedule of debt issues to one that aligns with the regulatory cycle. For a three year regulatory period, it would be efficient for a regulated firm to purchase:

    (i) interest rate swaps to convert the risk-free rate element of the cost of debt into 3-year debt; and

    (ii) credit default swaps to convert the debt premium element of the cost of debt into 3-year debt.

Therefore, even in the presence of refinancing risk, the appropriate risk-free rate benchmark remains the Commonwealth Government 3-year bond. As noted above, the risk-free rate as at 3 June 2010 is 4.91% (at 30 June is 4.76%).

In the case of QUU, taking account of the size of the notional face value of debt and BBB credit rating, Evans and Peck have estimated that the cost of interest rate swaps is 17.4 bp based on market data.[51]

At the same time, market research indicated that credit default swap contracts were not generally available for the volume of debt required by QUU based on the current structure of the Australian credit default swap market.

However, the Authority considers that a reasonable proxy for credit default swaps is the difference between the 10-year and the 3-year debt margins for BBB-rated bonds.

Data Service

In estimating the debt margin, an issue is whether to rely on the Bloomberg or CBASpectrum service. As the two services involve different sets of inputs and apply different methodologies, there is scope for differences in the resulting bond yields.

The Authority has previously noted its concerns about the CBASpectrum estimates that appear to generate AAA and BBB+ yield curves that are not markedly different after five years (QCA 2010). However, theory would predict that an unbiased estimate of a seven-year BBB+ yield

[51] Evans and Peck also advised the cost of interest rate swaps of 14.8bp for ten year to one year swaps, as requested by the Authority.

should materially exceed a seven year AAA yield due to a higher probability of default associated with the former.

As a result, the Authority considers that Bloomberg is a more reliable predictor at the current time. However, in mid 2010, Bloomberg did not report BBB yields for terms greater than seven years due to a lack of observations.

While there are a range of options to extrapolate the Bloomberg seven-year BBB yield to obtain a 10-year yield, the Authority considers that the approach adopted by QUU, of adding the term premium for the Bloomberg AAA fair value curve (7-10 years) is reasonable. As Bloomberg 7 year data is available the Authority is inclined to use this in preference to the 6 year data preferred by PwC.

Dr Lally noted that a further complication arises when estimating the WACC as at 30 June, as the seven and ten year AAA bond yields are not reported after 22 June 2010, whilst the seven year BBB yields are. Consequently, Dr Lally advised that the average of the term premium for the period 23 to 30 June 2010 is estimated from the average such value over 3 to 22 June.

Accordingly, the Authority has adopted a debt margin combining:

(a) the 3-year debt margin, estimated by Bloomberg as 2.74% for the 20 trading days ending 3 June 2010 (2.80% to 30 June 2010);

(b) compensation for the cost of credit default swap contracts which are not able to be directly priced. A proxy premium of 1.74% is allowed (the difference between the 10-year debt margin and the 3-year debt margin as at 3 June. The difference is 1.73% as at 30 June 2010);

(c) an allowance of 0.174% for interest rate swap costs; and

(d) an allowance of 0.125% for annual debt refinancing.

As at 3 June 2010, these allowances provide a total debt margin of 4.78%, and a cost of debt of 9.69%.

## B.9 Gamma

Gamma reflects the benefit from dividend imputation credits and is the product of the utilisation rate of those credits and the distribution rate (imputation credits distributed as a proportion of company tax paid).

To date, the Authority has adopted a gamma value of 0.50.

*Stakeholder Submissions*

Stakeholders did not comment on an appropriate value for the gamma parameter.

*Authority Analysis*

The Authority notes that on 13 October 2010 the Australian Competition Tribunal handed down its reasons for decision regarding the Australian Energy Regulator's South Australia and Queensland distribution determinations. The Tribunal found errors by the AER in its treatment of the imputation credit distribution ratio and the utilisation rate. However, the Tribunal did not make a determination on the value of gamma to be applied for the South Australia and Queensland distribution determinations. The Tribunal sought a report from the AER in relation to various aspects of the determination of gamma.

The further work being prepared by the AER as part of the Tribunal proceedings is not available for the Authority's Draft Report. The Authority also notes that the AER's Victoria distribution determination on 29 October 2010 reflects a gamma of 0.5.

As no stakeholders made submissions on a value for gamma, the Authority has retained its current value of 0.50.

## B.10 Conclusion on WACC

A comparison of the entities' proposed values along with Dr Lally's and the Authority's recommendations on the cost of capital for the three entities is set out in Table B.2. In general, the entities have a higher risk-free rate and equity/asset beta than Dr Lally's and the Authority's estimates. However, both Dr Lally and the Authority have a higher (total) debt margin than the entities. The differences between Dr Lally's and the Authority's estimates have been outlined above.

The Authority's estimate of 9.35% lies between Dr Lally's estimate (9.02%) and that proposed by the entities in their submissions (9.88% and 10.25%). The Authority's estimate also lies above the WACC used by QUU (9.2%), Allconnex (9.12%) and Unitywater (8.44%) at the time of price setting.

The Authority is proposing to use the same WACC for all entities over the interim period. Doing so minimises the regulatory and compliance costs of annual re-estimation and is consistent with a light-handed regulatory approach under price monitoring.

Using the same WACC for the interim period also has practical advantages given the deadlines in the Ministerial Direction and under recent legislation.

Using the same WACC for the interim period allows the Authority to indicate the WACC benchmark for 2010/11, 2011/12 and 2012/13 in this report and to finalise its advice on this matter by early 2011, noting that the Ministerial Direction specifies a deadline of 1 March 2011 for the Authority to advise the entities of the 2011/12 WACC benchmark.[52] The Authority understands that advice on the WACC benchmark was intended to allow the entities the option of using this advice in their proposed prices.

Under recent legislative amendments, the entities must publish proposed prices by 31 March in relation to the following financial year.

Comments on the WACC are therefore sought by **21 February 2011** to inform this advice.

[52] Using the same WACC for the interim period also avoids the timeline issues arising from respecifying the WACC in early 2011 (by 1 March 2011 at the latest) for the following financial year (for 2011/12) prior to finalising the WACC (by 31 March 2011) for the current financial year (2010/11).

**Table B.2: Cost of Capital Parameters**

| | ***QUU*** | ***Allconnex and Unitywater*** | ***Dr Lally*** | ***QCA*** |
|---|---|---|---|---|
| Risk-free rate | 5.43% | 5.65% | 4.50% | 4.91% |
| Market risk premium | 6.0% | 6.5% | 6.0% | 6.0% |
| Capital structure (% debt) | 60% | 60% | 60% | 60% |
| Debt beta | 0.11 | na | 0.0 | 0.11 |
| Asset beta | 0.43 | na | 0.35 | 0.35 |
| Equity beta | 0.84 | 0.8 to 1.0 (midpoint of 0.9) | 0.68 | 0.66 |
| **Cost of Equity** | **10.46%** | **10.85% to 12.15% (midpoint of 11.50%)** | **8.60%** | **8.85%** |
| Debt margin | 4.55% | 3.14% | 4.53% | 2.74% |
| Credit default swap (proxy) | na | na | na | 1.74% |
| Interest rate swap allowance | na | na | 0.148% | 0.174% |
| Annual debt refinancing allowance | 0.125% | na | 0.125% | 0.125% |
| Debt margin (total) | 4.68% | 3.14% | 4.80% | 4.78% |
| **Cost of Debt** | **10.11%** | **8.79%** | **9.30%** | **9.69%** |
| **WACC margin** | **4.82%** | **4.23%** | **4.52%** | **4.41%** |
| **Officer WACC3** | **10.25%** | **9.88%** | **9.02%** | **9.35%** |