


SEQ Water and Wastewater Price Monitoring 2012-13 Queensland Urban Utilities

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Assessment of Operating and Capital Expenditure – Review Report

Queensland Competition Authority

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SEQ Water and Wastewater Price Monitoring 2012-13 Queensland Urban Utilities

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Abbreviations

Acronym	Description
DN	Nominal diameter (typically of pipeline) in millimetres
EP	Equivalent Persons (used to quantify treatment plant capacity)
FTE	Full Time Equivalent (staff numbers)
PM	Project Manager or Project Management (to suit context)
QCA	Queensland Competition Authority
QUU	Queensland Urban Utilities
RM	Rising Main
SPS	Sewage Pumping Station
TSA	Transitional Service Agreement
WRP	Water Reclamation Plant
WWTP	Wastewater Treatment Plant

Executive Summary

Introduction

Halcrow has been commissioned by the Queensland Competition Authority (QCA or the Authority) to provide independent expert advice in support of its Interim Price Monitoring review of the monopoly distribution and retail water and wastewater activities of Queensland Urban Utilities and Unitywater (the entities). In particular, Halcrow has been engaged to undertake an independent assessment of capital and operating expenditure incurred by each of the two entities; this report documents the assessment of operating and capital expenditure undertaken in respect of Queensland Urban Utilities.

Scope of Review

Halcrow has been engaged to undertake assessments and provide independent expert advice in support of price monitoring by the undertaken by the QCA in respect of monopoly distribution and retail water and wastewater activities of Queensland Urban Utilities. In particular, advice is provided in respect of the following:

- assessment of capital expenditure, specifically:
 - the prudence and efficiency of capital expenditure against relevant service standards and demand forecasts;
 - progress against the issues identified for future reviews; and
 - the allocation of costs between services;
- assessment of operating expenditure, specifically:
 - the prudence and efficiency of operating expenditure against relevant service standards and demand forecasts;
 - progress against the issues identified for future reviews; and
 - the allocation of costs between services.

Management Systems and Processes

Halcrow has found QUU's management systems and approach to be generally consistent with other water industry distributor-retailer organisations. On this basis, Halcrow is of the view that QUU implements an appropriate management platform to facilitate operational prudence and efficiency.

Achievement of these outcomes is, however, dependent upon effective implementation of the processes and procedures that comprise the detail of these systems. Assessment of achievement has been made through the detailed review of QUU's operating and capital expenditure forecasts.

Review of Operating Expenditure

QUU's operating expenditure (excluding bulk water) increases (+10.3 percent) at a significantly greater rate than the assumed change in the CPI in 2012/13. This results from a range of factors including escalation in excess of the change in CPI for some expenditure items; large expenditures being incurred as a result of the separation from Brisbane City Council; enhancements to current processes and programs; and the impact of Government imposed charges and legislative compliance.

It should, however, be noted that:

- Whilst driven by Council, the separation process has not gone smoothly and may have incurred unnecessary costs.
- Remnant Council provided services have increased at a significantly greater rate than the general movement in prices.
- Some activities are being duplicated during the transition process.
- Water purchases are inflated by the level of non revenue water, notwithstanding this is, in part, a legacy issue.
- QUU's attention was diverted by the 2011 flood which delayed the transition process caused additional expenditure as a result of its physical impact.
- QUU's costing systems fall short of best practice for allocating costs between products and regions.
- There remain some identified opportunities for improved efficiency which are still being/yet to be investigated (and implemented as appropriate).
- Although inflated in part by the transition/separation program, QUU's costs remain much higher than its inter-state comparators.

QUU has identified a number of new initiatives and opportunities for efficiency gains; the proposed actions are considered to be generally appropriate for QUU as it transitions into its new organisational regime. Some of these initiatives will lead to improved efficiencies (although detailed evidence has not been provided), whilst others will result in improved levels of service or regulatory compliance albeit at some increase in operational cost.

Halcrow is of the view that some 40 percent of the expenditure identified as 'new initiatives' would more appropriately be identified as 'business as usual' expenses; this has the impact of increasing the base level of operating expenditure and, as a consequence, the assessment as to whether QUU is achieving the efficiency targets set by the QCA. Although it fails to meet 2 percent per annum efficiency targets in either 2011/12 or 2012/13 based on the figures reported in its Interim Price Monitoring Information Return, QUU does marginally exceed the target when actual recorded expenditure for 2011/12 is taken into account.

On the basis of its observations and analysis, Halcrow recommends that a reduction of some \$14.61 million in QUU's forecast of \$265.36 million is required to reflect an efficient level of regulated operating expenditure for 2012/13. This represents a downward adjustment in the order of 5.5 percent.

Review of Capital Expenditure

Of the ten (10) projects reviewed in detail, expenditure was generally found to be prudent. The main exception was a sub-project which involves rehabilitation of the Manly Elevated Steel Tank. In this case, QUU has identified that the asset is no longer required for water supply purposes, however, has nonetheless proceeded with the work.

Whilst allowances for direct (or base) expenditure were generally found to be efficient, Halcrow has assessed the contingency allowances for a number of the projects to be excessive. Some potential for delivery efficiencies has also been identified.

More specific observations arising from the review are as follows:

- Halcrow found that QUU generally has a very low appetite for risk within the business, and some of its funded programs of work were based on a 'zero failure' driver. Halcrow is of the view that consideration of an approach focused on striking a balance between asset performance and cost, would be more prudent.
- Halcrow assessed a number of rolling renewals programs. For programs of this nature, Halcrow would expect to see evidence of a more holistic approach to program development, based on asset condition and failure consequence, of the entire asset base rather than the ad-hoc approach currently being implemented. A long term, well defined program of renewals would enable the consideration of alternative delivery methods, with the potential for improved delivery efficiency.
- Furthermore, Halcrow also found that QUU has tended to procure these programs in relatively small, separate design, supply and construct packages. Whilst this enables QUU to maintain control over delivery of the program, it is not conducive to driving efficiencies into the project delivery process. Halcrow considers that a long term, well defined program of renewals would again lead to improved efficiency.
- Whilst it is usual practice to include for contingency within construction estimates, Halcrow considers the overall contingency allowance applied by QUU to be excessive, particularly those applied to projects within their renewals programs.
- Halcrow also notes that there are inconsistencies amongst the various sources of information. Whilst cost information presented in business cases generally aligns with those shown in QUU's Capital Investment Program, there is often a disconnect with information presented in the Project Manager (monthly) Reports and the Interim Price Monitoring Information Return.

Notwithstanding the above, Halcrow considers that QUU has generally adopted a sensible approach to project development, which (in most cases) is based on the preparation of a detailed feasibility report. This process ensures the project need is appropriately assessed against the perceived corporate risks and that the solution is both prudently and efficiently delivered against QUU's risk profile.

On the basis of the detailed review undertaken in respect of the ten (10) identified projects, Halcrow has recommended that the allowed 2012/13 expenditure in respect of seven (7) projects be reduced. It has also recommended that adjustments also be made

in respect of the remainder of the renewals programs on the basis of the observations made.

In total, a reduction of \$8.700 million is proposed in respect of the forecast capital expenditure to be incurred in 2012/13; this represents a 2.9 percent reduction in the total capital program. Reductions are also proposed for future years.

1 Introduction

1.1 Overview

Halcrow has been commissioned by the Queensland Competition Authority (QCA or the Authority) to provide independent expert advice in support of its Interim Price Monitoring review of the monopoly distribution and retail water and wastewater activities of Queensland Urban Utilities and Unitywater (the entities). In particular, Halcrow has been engaged to undertake an independent assessment of capital and operating expenditure incurred by each of the two entities.

This report documents the assessment of operating and capital expenditure undertaken in respect of Queensland Urban Utilities.

1.2 Background

The Treasurer/Minister for State Development and the Minister for Finance/Minister for The Arts have referred the monopoly distribution and retail water and wastewater activities of Queensland Urban Utilities and Unitywater to the Authority for price monitoring from 1 July 2011 to 30 June 2013. Halcrow understands that the Gold Coast, Logan and Redland City Councils (previously serviced by Allconnex Water) are not included in this price monitoring review.

Under the referral, the Authority must:

- 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;
- monitor the revenues of each activity over the regulatory period, based on the total costs of carrying on the activity; and
- provide a Draft Report for 2012-13 by 31 January 2013 and a Final Report by 31 March 2013.

This is the third year of price monitoring of the entities and the final year of the interim price monitoring period. The Authority's previous reports have supported a number of initiatives for implementation in respect of the entities' future expenditure, including the adopted approach for preparation and reporting of cost estimates and the associated governance processes.

1.3 Scope of Review

As previously noted, Halcrow has been engaged to undertake assessments and provide independent expert advice in support of price monitoring by the undertaken by the QCA in respect of monopoly distribution and retail water and wastewater activities of Queensland Urban Utilities. In particular, advice is provided in respect of the following:

- assessment of capital expenditure, specifically:
 - the prudence and efficiency of capital expenditure against relevant service standards and demand forecasts;
 - progress against the issues identified for future reviews; and
 - the allocation of costs between services;
- assessment of operating expenditure, specifically:
 - the prudence and efficiency of operating expenditure against relevant service standards and demand forecasts;
 - progress against the issues identified for future reviews; and
 - the allocation of costs between services.

Halcrow notes that the QCA has awarded a separate consultancy to undertake an assessment of entities' projected demand. The findings of this review of operating and capital expenditure (expenditure review) will be, in part, dependent upon the outcomes of that review.

Detailed requirements in respect of the scope of each of the two reviews are outlined in the respective Terms of Reference.^{1,2}

1.4 Structure of Report

This report discusses and presents Halcrow's key findings and recommendations arising from the assessment of operating and capital expenditure to be incurred by Queensland Urban Utilities. Specifically:

- **Section 1** provides background in respect of Queensland Urban Utilities, the QCA and the scope of this review.
- **Section 2** provides a brief overview of the information provided by Queensland Urban Utilities for the purposes of this review.
- **Section 3** provides an overview of the approach adopted by Halcrow in reviewing the efficiency of operating expenditure and the prudence and efficiency of capital expenditure.
- **Section 4** outlines Halcrow's review of Queensland Urban Utilities' management processes, and more specifically, its approach to planning and asset management.
- **Section 5** outlines Halcrow's assessment of the operating expenditure incurred/forecast by Queensland Urban Utilities.
- **Section 6** outlines Halcrow's assessment of capital expenditure incurred/forecast by Queensland Urban Utilities.
- **Section 7** summarises the findings of Halcrow's assessment and presents the conclusions drawn from the review. Recommendations in respect of the prudence and efficiency are also presented.

¹ QCA, *Terms of Reference; SEQ Interim Price Monitoring; Assessment of Operating and Capital Costs*, dated 22 August 2012.

² QCA, *Terms of Reference; SEQ Interim Price Monitoring; Assessment of Projected Demand*, dated 22 August 2012

1.5 Report Limitations

This report has been prepared for the Queensland Competition Authority, by Halcrow, for the sole purpose of providing an assessment as to the prudence and efficiency of forecast operating and capital expenditure to be incurred by Queensland Urban Utilities over the price monitoring period and specifically for 2012/13. This report cannot be relied upon by any other party or for any other purpose.

Halcrow's assessment has been undertaken on the basis of information and material provided by Queensland Urban Utilities, from meetings and discussions held with Queensland Urban Utilities representatives, and on information provided by Queensland Urban Utilities subsequent to those discussions.

Importantly, Halcrow has not undertaken any independent verification of the reliability, accuracy or completeness of the source data and information provided. Therefore, it should not be construed that Halcrow has carried out any form of audit or other verification of the adequacy, completeness, or accuracy of the specific information provided by Queensland Urban Utilities.

2 QUU Submission and Supporting Information

2.1 Information Provided

Queensland Urban Utilities' submission in respect of the Interim Price Monitoring for 2012/13 comprises the following documentation:

- Interim Price Monitoring Information Return 2012/13;³ and
- Interim Price Monitoring Information Return 2012/13 – Data Template.⁴

Other supporting information that has been provided for the purposes of conducting this review has included:

- Detailed information in support of proposed operating expenditure;
- Capital project business cases; and
- Additional information and clarifications in response to specific questions and information requests raised by Halcrow.

2.2 Adequacy of Information Provided

2.2.1 General

The adequacy of information provided by Queensland Urban Utilities (QUU), for the purposes of this review, in respect of both operating expenditure and capital expenditure is discussed separately in the following sections.

2.2.2 Operating Expenditure related information

QUU has not followed QCA's data requirements in completing the Data Template for Operating Expenditure. Examples include the reporting of corporate costs and the allocation of electricity expenditure to regions and products. This compromises the analysis and comparisons with other utilities below the aggregate level of operating expenditure.

The reporting of corporate expenditure is unlikely to change, as QUU's account classification system does not support QCA's cost classification approach.

Another area of uncertainty is the reporting of contractor/sub-contractor expenditure. These are reported under Other Materials and Services in QUU's statutory accounts; in the QCA return they are reported separately. Many of QUU's responses to Halcrow's queries were, however, based on documents prepared in accordance with the statutory reporting requirements, thereby creating uncertainty in the understanding of variances within QCA's cost classifications.

³ Queensland Urban Utilities, *QCA Interim Price Monitoring; Information Return 2012/13*, 31 August 2012.

⁴ Queensland Urban Utilities, *SEQ Interim Revenue Monitoring; Information Requirement Template 2012/13* (populated MSEXcel Spreadsheet), 31 August 2012.

QUU's Submission does not adequately address the reasons for deviations from its 2011/12 Submission to its 2012/13 Submission, or the variations between the projected outcomes for 2011/12 and its forecasts for 2012/13. This is reflected in the number of queries Halcrow was required to submit post receipt of the Submission and Data Template.

Neither QCA's Data Template nor QUU's submission capture the information required for effective benchmarking of QUU with other utilities. It would assist if QCA were to define the metrics it requires for benchmarking and included the reporting of these in its template. This would enable a consistent time series to be established for each organisation as well as ensuring that common definitions are adopted across the utilities it monitors.

Despite these comments, QUU was cooperative in responding to Halcrow's queries and provided much information in support of its expenditure proposals.

2.2.3 Information in support of Capital Expenditure

QUU supplied reasonable supporting information to enable assessment of the prudence and efficiency of the selected sample of capital projects. Based on reports from previous Interim Price Monitoring reviews, it appears that QUU has made progress towards achieving a standard capital planning program and is beginning to roll out standard reporting which has enabled a comprehensive assessment of capital expenditure.

Halcrow had some difficulty in understanding itemised costs associated with capital expenditure and difficulty understanding how this translated to as-constructed costs. Future assessments could be streamlined by ensuring that all major expenditure line items are consistently included in planning documentation, approvals documentation and any project reports. It is helpful when major line item descriptions match; this ensures that the capital approvals process remains transparent and any variation from planned expenditure can be appropriately tracked. Cost/timing/risk learnings can be more effectively understood by both QUU and the QCA (or its advisors) and incorporated into other projects. This approach will also ensure that contingency and variation budgets can be appropriately understood.

Halcrow recognises that data availability for some projects is limited due to project handovers from constituent Councils. Where appropriate, it is apparent that QUU has tried to integrate legacy projects from the Councils with its adopted capital planning approach.

3 Review Methodology

3.1 Overview

The review of Queensland Urban Utilities' operating and capital expenditure has comprised a number of elements including:

- A desktop review of information provided by Queensland Urban Utilities in its Interim Price Monitoring Information Return and associated Data Template.
- Preparation of a Request for Information that identified key supporting information required to effectively undertake the review. This was submitted to the Queensland Urban Utilities on 27 September 2012.
- Meetings with Queensland Urban Utilities representatives at the entity's Brisbane CBD offices to obtain more detailed information in relation to its historical and forecast expenditure; meetings were held on 2nd and 3rd October 2011.
- A desktop review of information provided by Queensland Urban Utilities in support of its Information Return, both during and subsequent to the meetings with its representatives. Additional requests for information were made by Halcrow on the basis of information provided.
- The detailed review of key elements of operating expenditure to assess the efficiency of such expenditure.
- The detailed review of key elements of capital expenditure to assess the prudence and efficiency of such expenditure.
- Synthesis of data obtained from the above evaluation to draw conclusions in respect of the efficiency and prudence of the expenditure.
- Preparation of this report to document the findings of the review.

The review has also been informed by the learning Halcrow gained by reviewing the findings presented in the Authority's previous Interim Price Monitoring Reports.^{5,6}

The following sections outline the basis upon which the prudence and efficiency of expenditure has been assessed.

3.2 Assessment of Prudence

The assessment of whether Queensland Urban Utilities' capital expenditure is *prudent* has been split into a number of key tasks.

For the purposes of this review, the Authority has defined prudence as follows:⁷

⁵ QCA, *Final Report; SEQ Interim Price Monitoring; Part A - Overview*, March 2011; and QCA, *Final Report; SEQ Interim Price Monitoring for 2010/11; Part B - Detailed Assessment*, March 2011.

⁶ QCA, *Final Report; SEQ Interim Price Monitoring for 2011-12; Part A - Overview*, March 2012; and QCA, *Final Report; SEQ Interim Price Monitoring for 2011-12; Part B - Detailed Assessment*, March 2012.

“Expenditure is prudent if it is required as a result of a legal obligation, new growth, renewal of existing infrastructure, or it achieves an increase in the reliability or the quality of supply that is explicitly endorsed or desired by customers, external agencies or participating councils”

The first key task has involved the review and assessment of whether Queensland Urban Utilities has in place an effective and robust planning framework. Effective and robust planning frameworks provide the context and strategic direction for capital and operational planning, and enable an organisation to demonstrate that its investment decisions have been prudent and appropriately targeted.

An effective planning framework typically includes the following key elements:

- provides detail on how an organisation aims to achieve its strategic, legislative or regulatory objectives and manage its key risks (ie. transparent and robust principles that ensure alignment between strategic objectives and investment priorities);
- identifies drivers for investment, including trigger points;
- defines the process, principles and accountabilities for developing the capital and operating plans, and provides transparent and robust principles to ensure alignment between strategic objectives and investment priorities, incorporating customer and stakeholder requirements;
- provides a reasoned method of allocating expenditure and prioritising programs/projects, thereby optimising the selection and delivery of the capital and operating expenditure programs;
- incorporates approval processes and allows for sufficient monitoring and reporting against budget/implementation plans; and
- reflects operating environment and service requirements.

Halcrow’s review of Queensland Urban Utilities’ planning framework has been aimed at assessing whether the above key elements can be identified.

The second key task in the assessment of prudence has involved testing whether Queensland Urban Utilities has been able to demonstrate the rigour with which the framework is applied throughout the organisation. This has involved a more detailed review of actual and proposed capital expenditure, including renewal programs.

The prudence test has considered the following:

- the basis (driver) for the investment;
- the outputs (and benefits) associated with each project or expenditure program;
- the methods by which projects and initiatives were identified and developed including the application of any risk based processes used to prioritise projects or initiatives; and
- the planning and design processes used to develop projects, and evidence of options considered and design development.

⁷ QCA, *Terms of Reference; SEQ Interim Price Monitoring: Assessment of Operating and Capital Costs*, dated 22 August 2012, page 3.

3.3 Assessment of Efficiency

In undertaking the review of efficiency, Halcrow has sought to determine whether the costs presented in Queensland Urban Utilities' Interim Price Monitoring Information Return (and associated Data Template) reflect those that would normally be expected to occur in a competitive environment.

For the purposes of this review, the Authority has defined efficiency as follows:⁸

“Expenditure is efficient (cost-effective) if:

- the scope of the works (which reflects the general characteristics of the capital item) is the best means of achieving the desired outcomes after having regard to the options available, including more cost-effective regional solutions having regard to a regional (whole of entity) perspective, the substitution possibilities between capital and operational expenditure and non-network alternatives such as demand management;*
- the standard of the works conforms with technical, design and construction requirements in legislation, industry and other standards, codes and manuals. Compatibility with existing and adjacent infrastructure is relevant as is consideration of modern engineering equivalents and technologies. Compliance with Strategic Asset Management Plans, Total Management Plans and Netserv Plans are likely to be highly relevant; and*
- the cost of the defined scope and standard of works is consistent with conditions prevailing in the markets for engineering, equipment supply and construction. The consultant must substantiate its view with reference to relevant interstate and international benchmarks and information sources. For example, the source of comparable unit costs and indexes must be given and the efficiency of costs justified. The consultant should identify the reasons for any costs higher than normal commercial levels.”*

In undertaking the assessment of expenditure efficiency, Halcrow has sought to determine the following:

- the current stage of the design development (as this will provide an indication of the likely accuracy of any cost estimates);
- the cost estimation methodology, including the estimating process, key cost components, assumptions and unit rates; and
- assumptions surrounding the application of contingencies and escalation factors.

3.4 Cost Escalation

Throughout this report, all expenditure has been reported in \$nominal unless otherwise stated. Whilst specific escalation factors adopted by Queensland Urban Utilities in developing its operating expenditure forecasts are discussed in **Section 5.2.6.4**, it is appropriate to provide an indication of the background escalation so as to enable some understanding of the real movement in costs at an aggregate level. Accordingly, indicative escalation factors and associated multipliers to facilitate conversion to \$real 2012/13 are presented in **Table 3.1**.

⁸ QCA, *Terms of Reference; SEQ Interim Price Monitoring: Assessment of Operating and Capital Costs*, dated 22 August 2012, page 3.

Table 3.1: Escalation Factors used in this Report

Escalation from	Escalation Factor	Multiplier
\$2007/08 to \$2008/09	2.02%	1.1033
\$2008/09 to \$2009/10	3.20%	1.0815
\$2009/10 to \$2010/11	3.84%	1.0479
\$2010/11 to \$2011/12	0.92%	1.0092
\$2011/12 to \$2012/13	2.50%	1.0000
\$2012/13 to \$2013/14	2.50%	0.9756
\$2013/14 to \$2014/15	2.50%	0.9518

Escalation factors for past years are nominated on the basis of Consumer Price Index (CPI) figures available from the Australian Bureau of Statistics.⁹ An indicative factor of 2.5 percent per annum is nominated for forecast years.

⁹ Adopted rates based on Australian Bureau of Statistics, *Catalogue 6401.0 - Consumer Price Index, Australia, Jun 2012*, All Groups CPI – Brisbane, June figures.

4 Management Systems and Processes

4.1 Overview

Queensland Urban Utilities (QUU) was created as a result of the Queensland Government's structural reform of the South East Queensland water sector. It was one of three (3) distributor-retailer entities¹⁰ created in 2010 (under the provisions of the *South-East Queensland Water (Distribution and Retail Structuring) Act, 2009*) to service the growing population of South East Queensland region. It has responsibility for delivering drinking water, recycled water and sewerage services to the cities and townships within the boundaries of the Brisbane and Ipswich City Councils as well as the Lockyer Valley, Scenic Rim and Somerset Regional Councils.

Given that these structural changes have only recently occurred, QUU operates in a changing environment. A focus of its current activities is the transition to a new business regime as it separates from its primary constituent council (ie. Brisbane City Council). These transitional arrangements involve changes in the manner (from a resourcing viewpoint) in which it provides a number of key support services and the implementation of new business systems.

This section provides an overview of QUU's operating environment and its management systems and business planning frameworks in order to provide an understanding of the basis upon which its expenditure proposal for 2012/13 has been developed.

4.2 Operating Environment

4.2.1 South East Queensland Water Grid

QUU operates as part of the South East Queensland Water Grid, an operating environment that has been developed through structural reform of the South East Queensland water sector.

This regime comprises state-owned bulk water entities and council owned distributor-retailers. The relationship between each of the participants, together with their primary responsibilities, is shown in **Figure 4.1**.

Halcrow notes that the Queensland Government has announced that the three (3) bulk water entities will be merged into a single body from 1 January 2013.¹¹

¹⁰ Three (3) distributor-retailer entities were originally created. Queensland Urban Utilities and Unitywater continue to operate, however, the water and wastewater service responsibilities of Allconnex Water have subsequently been disaggregated back to its constituent Councils.

¹¹ Refer <http://statements.qld.gov.au/statement/id/80032> and Queensland Government, *South East Queensland Water (Restructuring) Amendment Regulation (No. 1) 2012*.

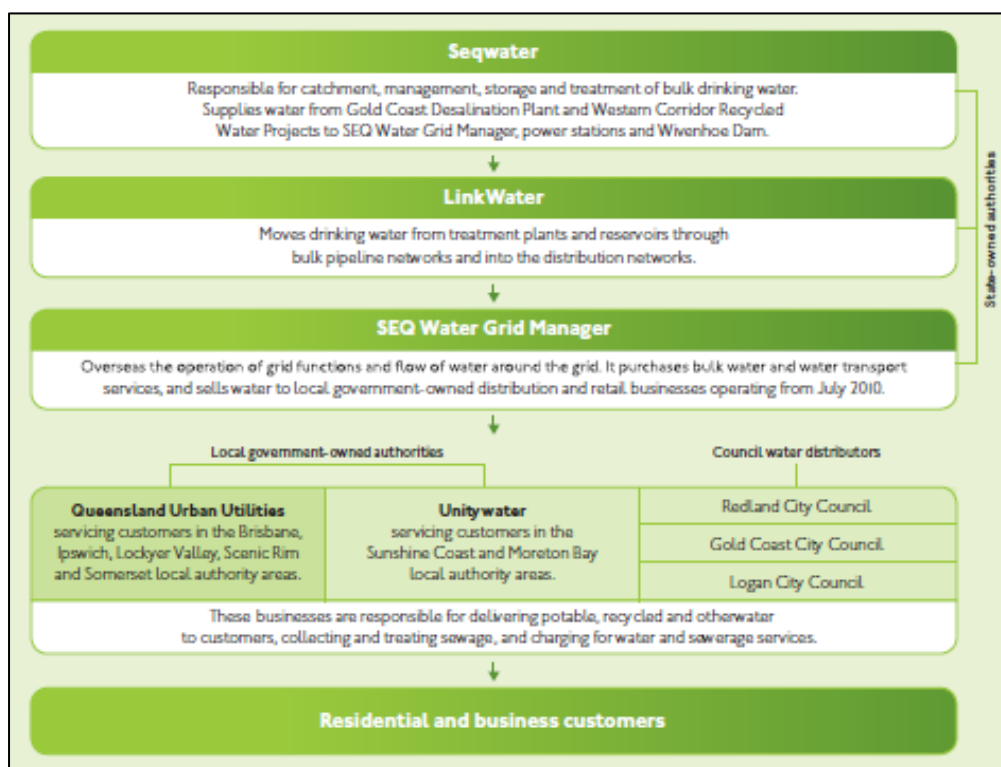


Figure 4.1: Relationship of South East Queensland Water Grid¹²

4.2.2 Area and Scope of Operations

QUU provides water supply and sewerage services to approximately 1.3 million customers within an area covering some 14,384 square kilometres (refer **Figure 4.2**). Water services are provided to more than 515,000 residential and 29,000 non-residential connections, whilst 491,000 residential and 27,000 non-residential connections allow QUU's customers to take advantage of its sewerage services. QUU also services 5,028 trade waste and 225 recycled water customers.¹³

QUU's water infrastructure assets include:¹⁴

- 122 water reservoirs;
- 39 water supply pumping stations;
- 107 water booster pumping stations;
- 8,800km of water supply pipelines
- 28 sewage treatment plants;
- 336 sewage pumping stations; and
- 9,000km of sewerage pipeline.

¹² Source: Queensland Urban Utilities, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page ii.

¹³ Queensland Urban Utilities, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page vii.

¹⁴ Ibid, page iii.

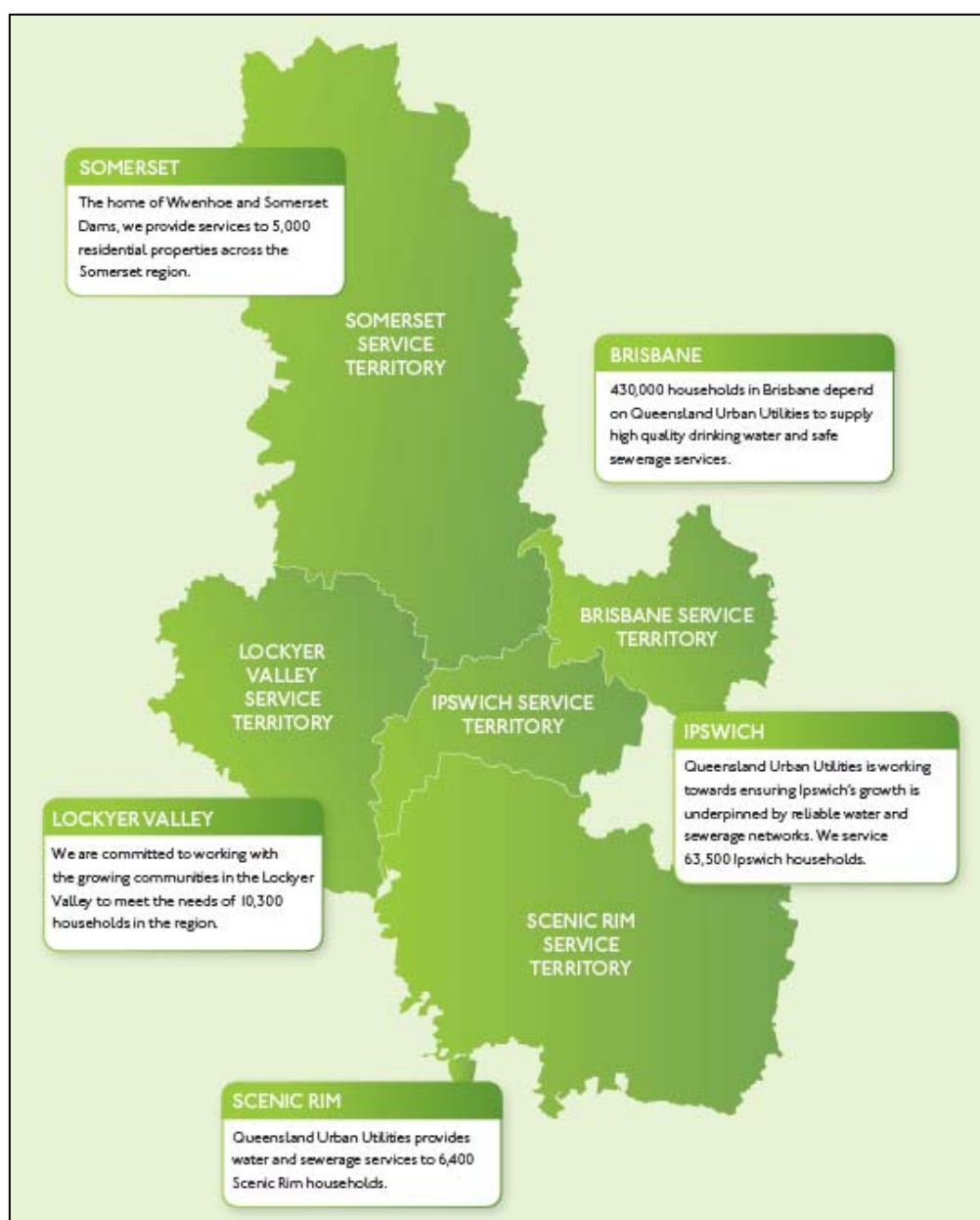


Figure 4.2: QUU Service Area¹⁵

4.2.3 Governance

QUU is jointly and wholly owned by the Brisbane City, Ipswich City, Lockyer Valley Regional, Scenic Rim Regional and Somerset Regional Councils. The six parties (Participants), ie. Queensland Urban Utilities (formally Central SEQ Distributer-Retailer Authority) and the five Councils, have entered into a *Participant Agreement*¹⁶ that outlines their relationship and respective obligations; a Statement of Obligations is incorporated (as Schedule 1) into the Agreement.

¹⁵ Source: Queensland Urban Utilities, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page vii.

¹⁶ *Participation Agreement; Central SEQ Distributer-Retailer Authority* between Brisbane City Council, Ipswich City Council, Lockyer Valley Regional Council, Scenic Rim Regional Council, Somerset Regional Council and Central SEQ Distributer-Retailer Authority, 9 June 2010.

Under the provisions of the *Participation Agreement*, QUU is to be governed by a Board consisting of a minimum of four (4) and a maximum of eight (8) Members; the Board is responsible for the way the Authority (QUU) performs its functions and exercises its powers. Board Members are appointed by the Participants, and must include no more than two (2) members who are employees of a participating council and at least three (3) (independent) members who are not employees of a participating council.

It is noted that the Participation Agreement provides for the payment of a *Participation Return* (a form of dividend) to the Participants on the basis of their *Participation Rights*. Such rights are determined on the basis of the Participating Council's Regulated Asset Base as at 1 July 2010.

4.3 Organisational Arrangement

4.3.1 QUU Organisation Structure

QUU's organisation structure is shown (in principle)¹⁷ in **Figure 4.3**. This is the basis upon which its budget is compiled (refer **Section 4.4.5** for further discussion).

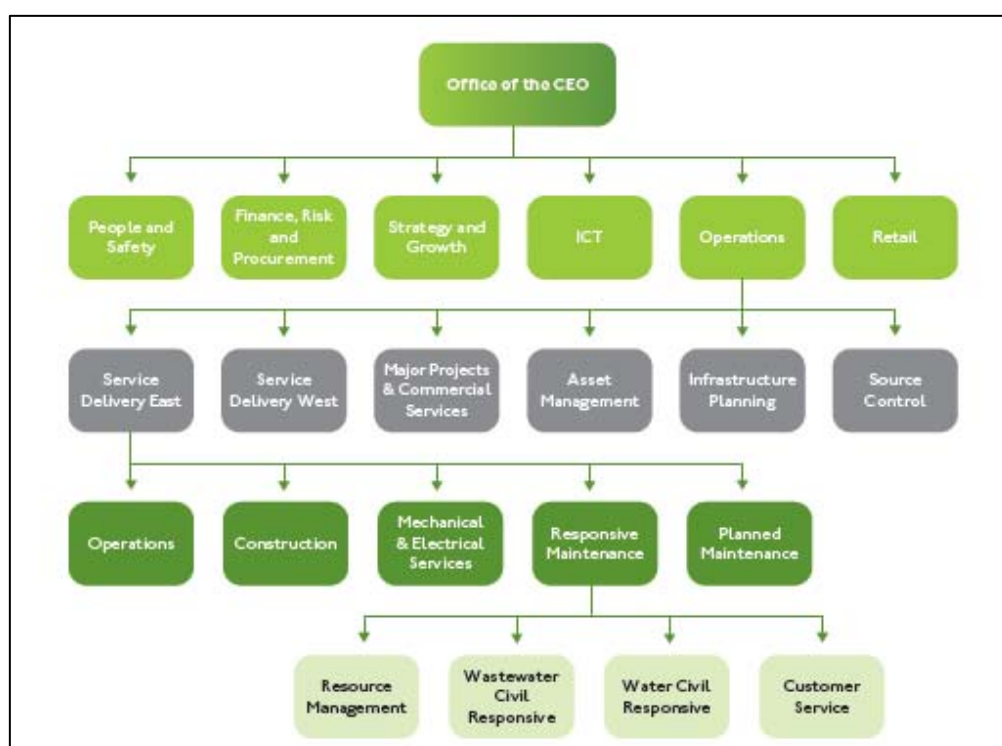


Figure 4.3: QUU Organisation Structure¹⁸

¹⁷ **Figure 4.3** does not show the full structure; whilst the primary divisions are represented, subsequent levels are indicative of the broader organisation.

¹⁸ **Source:** Queensland Urban Utilities, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page 28.

Halcrow notes that the primary divisional structure is typical of the organisational arrangement currently adopted by a range of Australian water companies. The 'Operations' Division is responsible for the principal infrastructure management and service delivery roles; the breakdown in respect of this division provides an indication of the manner in which QUU's operational activities are organised.

Other supporting documentation¹⁹ provided by QUU identifies key roles in divisions other than the Operations Division. A review of this information reveals that nominated roles are generally as expected.

4.3.2 Assessment of Organisational Arrangements

On the basis of a high level review (detailed breakdown of divisions has not been sighted or assessed), it appears that QUU is organised and undertakes functions that are consistent with other water industry distributor-retailer organisations. On this basis, Halcrow is of the view that the organisational arrangement provides an appropriate platform for operational efficiency.²⁰

4.4 Management Systems

4.4.1 Overview

QUU operates in accordance with/implements a number of management systems that either drive or support its operations. Key instruments, both of which are required under the provisions of the QUU Participation Agreement, are the:

- Corporate Plan; and
- Operational Plan.

QUU's operational and capital activities are underpinned by its Strategic Asset Management Plan (SAMP). This instrument defines the basis upon which QUU plans and implements its operations, maintenance and capital investment activities.

QUU is currently in the process of developing its Netserv Plan, which it is required to do under the provisions of the *South-East Queensland Water (Distribution and Retail Restructuring) Act, 2009*.²¹ This will become a key tool for the strategic operation of the business,²² effectively replacing the Strategic Asset Management Plan.

¹⁹ Organisational structure diagrams presented as *QUU Corporate Structure Pre Feb 2012.pdf* and *QUU Corporate Structure Post Feb 2012.pdf*.

²⁰ Halcrow notes that it is not an organisational management consultant; observations are made on the basis of apparent consistency with other water entities delivering similar services.

²¹ Under the provisions of Chapter 4B of the Act; "An SEQ service provider is required, by 1 July 2013, to have a plan (a water netserv plan) about its water and wastewater networks and providing its water and wastewater service."

²² QUU, *QCA Interim Price Monitoring; Information Return 2012/13*, 31 August 2012, page 8.

4.4.2 Corporate Plan

QUU's Corporate Plan²³ identifies the entity's strategies for success, noting that over the life of the Plan, it will see accelerating change including intensified pressure from climate change, rapid evolution of customer attitudes and expectations and opportunities arising from emerging technologies.²⁴

The Corporate Plan indicates that QUU's corporate objectives for 2011-2016 are to deliver the following,²⁵ and outlines (at a high level) its strategies for achievement:

- service valued and trusted by our customers and the community;
- business efficiency and sustainability;
- appropriate financial performance;
- sustainable growth; and
- safe, capable and dedicated people.

The Plan outlines financial targets and key results that QUU aims to achieve over the five year period covered by the Plan. Forecasts of operating and capital expenditure, broken down to both region and service level,²⁶ are presented together with the identification of efficiency targets.²⁷

4.4.3 Operational Plan

QUU's Operational Plan²⁸ is prepared on an annual basis. It supports the Corporate Plan, identifying success targets for the year of focus (sample document provided relates to the 2011/12) and the strategies to be implemented to achieve them.

The Plan identifies planned strategic outcomes and related implementation strategies in respect of each of the five corporate objectives for the year, together with performance indicators and targets in each case.²⁹ It also identifies the customer service standards to which it has committed, noting that these are applicable over all areas of its operations (ie. the Brisbane City, Ipswich City, Lockyer Valley Regional, Scenic Rim Regional and Somerset Regional Council areas).³⁰

Halcrow notes that the Operational Plan is a high level document that does not include any detail in respect of either operational activity or the annual budget. Whilst the forecast total capital spend is identified, it only identifies the elements to be considered under its Budget Framework for the subject year (in this case 2011/12).

²³ QUU, *Corporate Plan 2011-2016* (Doc ID: MP44, Version 2), undated.

²⁴ Ibid, page iv.

²⁵ Ibid, page 14.

²⁶ Ibid, pages 34-36.

²⁷ Ibid, pages 25/26.

²⁸ QUU, *Operational Plan 2011-2012* (Doc ID: MP43(1)), undated.

²⁹ Ibid, pages 8/9.

³⁰ Ibid, pages 14/15.

4.4.4 Asset Management Framework

4.4.4.1 General

As previously noted, QUU's operational and capital activities are underpinned by its Strategic Asset Management Plan (SAMP). Prior to the formation of QUU, its constituent council owned water businesses were required to prepare and adhere to a SAMP. QUU has continued to use these SAMPs to guide its asset management activities whilst it develops its Water Netserv Plan (refer **Section 4.4.5**), which will effectively constitute its asset management framework following implementation on 1 July 2013.

The SAMPs outlined the services provided as well as the standards that those services would meet. SAMPs also outline the infrastructure required to meet these standards, along with operations, maintenance, and renewals strategies to be adopted, and the means by which activities outlined in the SAMP would be financed.³¹

Neither QUU's SAMP(s) nor derivative documentation³² has been provided for review. Nonetheless, Halcrow has been able to gain an understanding of QUU's asset management practices through the review of both operating and capital expenditure.

4.4.4.2 Integrated Approach to Planning

In regard to asset management, QUU states that, in developing an organisation wide approach to asset management, it has:³³

"... integrated key asset management components into the way its assets are operated, maintained, renewed and enhanced". The integration ensures:

- *The applicable operate and maintain strategy is applied, ensuring the required levels of service are met and the asset operates for its intended life.*
- *Asset rehabilitation/ renewal requirements are identified, justified and then applied at the required point in the asset life cycle.*
- *Cross-referencing between the renewal and the growth is undertaken to optimise the level of investment required for future system demands."*

QUU uses a combination of the four basic/fundamental strategies of asset management for managing the maintenance and renewals of its existing asset base. These strategies/approaches (periodic maintenance; condition based; run to fail; and design out/review) take into consideration standards of service, consequence, likelihood, legislation and expected life which varies depending on asset class. QUU advises that the delivery and implementation of the asset management strategy is achieved through the operational maintenance and capital renewal funding streams, and their associated programs.³⁴

³¹ QUU, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page 75.

³² QUU, *Maintenance Planning (Reference TEM142)*, 2012 references Asset Management Plans, Maintenance Strategies and Maintenance Plans are key documents that typically part of an overall Asset Management Framework.

³³ QUU, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page 35.

³⁴ Ibid.

The adoption of a combination of these four strategies is in line with industry standard practices. It is, however, important that the appropriate management strategy is selected for each asset class. To enable this, information such as existing maintenance regime, and condition and criticality (risk) information needs to be updated regularly. Furthermore, the preferred asset management strategy itself needs to be continually re-evaluated, thereby ensuring continuing efficiency when external factors are constantly changing.

On the basis of Halcrow's observations, QUU has not yet achieved the optimum balance in respect of its asset management strategies (refer **Section 4.4.4.4** for further discussion). Achievement of an appropriate balance will lead to greater operational efficiencies.

4.4.4.3 Capital Planning

QUU's Interim Price Monitoring Information Return provides information on its policies and procedures related to capital expenditure.³⁵

The capital planning undertaken by QUU for its water supply and sewerage transport and treatment infrastructure is generally approached on the following levels:³⁶

- Strategic planning – involves development of a high-level servicing strategy that is applicable to the entire service area;
- Master planning – involves strategy development and investigation of individual supply area schemes in accordance with the broader strategic plan; identifies the need for, timing and costs of new infrastructure required to meet service obligations;
- Local government priority infrastructure planning – involves the development of Priority Infrastructure Plans that are used to integrate land use and infrastructure planning;
- Pre-feasibility and detailed feasibility planning – involves the detailed justification and planning of proposed capital works including establishment of project requirements, gaining appropriate inputs, assessing feasibility and developing preliminary design solutions; and
- Integrated water management planning – this involves extending the traditional strategic and master planning process to take a broader view in respect of managing the urban water cycle.

This is considered to be an appropriate planning approach; it is similar to that adopted by other water companies in respect of which Halcrow has previously undertaken similar reviews. Nonetheless, prudence and efficiency require assessment at a detailed level; the implementation of these practices has been (in part) assessed through the detailed review of a sample of capital projects/programs, which revealed that they have generally been followed.

³⁵ QUU, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012.

³⁶ Ibid, page 37.

QUU has advised that adoption of a regional approach is now an essential part of its planning activities. It claims that this approach has already delivered savings in the order of \$21 million by regionalising sewage treatment from Goodna Sewage Treatment Plant to Wacol Sewage Treatment Plant and has resulted in significant deferral of planned capital works.³⁷

QUU also states that it has adopted a ‘just-in-time’ delivery approach.³⁸ Halcrow notes that this approach is considered to be industry standard and with effective planning is regarded as efficient. Its review of the Deebing Creek Sewer Trunk Main Augmentation project (for example) demonstrates planned staging of works to meet demand requirements.

An issue identified by the QCA in its review of QUU’s demand forecasts relates to the demand figure adopted for detailed project planning purposes. QUU’s *Demand Forecasting User Guide*³⁹ indicates that growth projections developed in the Master Plan are to be assessed against more updated estimates (provided by councils) and the higher estimate used for feasibility planning purposes on the basis that “ *this is deemed to be more conservative and ensures the business is able to maintain supply continuity and service standards*”. In response to the concern that this may lead to excessive capacity being provided earlier than required, Halcrow notes its observations in respect of the Deebing Creek Sewer Trunk Main Augmentation project, which was driven primarily by growth (although also notes that this project is not necessarily indicative of the whole of the capital program).

The initial scheme (as proposed by Ipswich City Council) was based on its own population/demand projections. QUU reviewed these figures in 2008 and again in 2010, with forecast growth in the order of 75 percent lower than forecast by Council (PWWF – 140 litres per second versus 80 litres per second in 2011). Based on latest projections, a PWWF of 140 litres per second would not be achieved until 2015. Whilst QUU sized the pumps to meet the PWWF of 140 litres per second, it staged the design of the pipeline to ensure additional trunk main capacity is not provided until growth demands it. Whilst the pumps are bigger than initially needed (short term replacement would have attracted additional cost), QUU has deferred the expensive part of the scheme (tunnel section) until growth demands it. Practice in this case therefore appears to be contrary to the demand policy in question.

In making investment decisions, QUU applies a 30-year capital investment planning horizon, which details year-by-year expenditure.⁴⁰ Costs associated with some proposed infrastructure may be borne by developers, and this is removed from costs associated with the 30-year plan. The 30-year plan then has infrastructure timings prioritised to balance proposed expenditure. A five-year slice of the 30-year plan is taken forward for detailed budget deliberation on an annual basis.

³⁷ Ibid, page 32.

³⁸ Ibid, page 32 (also reiterated by personal comment during meetings on 2/3 October 2012).

³⁹ QUU, *User Guide; Short-term and Long-term Demand Forecasting Procedure (Version 2)*, 10 August 2012, Section 4.3.2.3, page 49.

⁴⁰ QUU, *QCA Interim Price Monitoring; Information Return 2012/13*, 31 August 2012, page 38.

This approach is considered appropriate; it is generally consistent with the approach adopted by other water utilities (the forecast horizon typically varies between 25 and 50 years). It is therefore considered to be a prudent approach, providing 30-year plans are regularly reviewed and updated.

Within its broader planning environment, QUU is currently implementing project development stages and gateway reviews to assist with capital project delivery. It is understood the following steps are implemented as part of the project planning process, which results in the preparation of a business case:

- Define the problem or opportunity/Propose concept solution;
- Pre-feasibility study;
- Detailed feasibility study/Options analysis; and
- Preliminary Design.

The project then is fed into the annual prioritisation model to ensure funding is directed to the highest priority works. Following this, for major projects, an independent review is undertaken, with evaluation criteria including design standards, growth projections, project justification, project deliverability and cost.

QUU promotes a gateway review program to supply independent support to major projects, initially testing the strength of the business case. QUU has stated that projects over \$5 million will undergo three (3) formal gateway reviews;⁴¹ these include:⁴²

- Gate 1 – Business Justification;
- Gate 2 – Delivery Strategy;
- Gate 3 – Investment Decision.

Other gateways include Strategic Assessment (Gate 0 – informal) and post implementation Project Review (Gate 4 – formal).

According to QUU, the gateway review program helps achieve the entity's stated business aims, and supports project owners by helping them to ensure that:⁴³

- *“the best available skills and experience are used on the project;*
- *all stakeholders completely understand the project status and issues involved;*
- *they achieve realistic time and cost targets for the project;*
- *they provide guidance and advice to project teams from independent fellow practitioners;*
- *assurance that effective project governance and project management arrangements are in place;*
- *effective risk management practices are being used;*
- *project objectives are aligned to the strategic deliverables;*

⁴¹ QUU, *QCA Interim Price Monitoring; Information Return 2012/13*, 31 August 2012, page 47.

⁴² QUU, *QCA Interim Price Monitoring; Information Return 2012/13*, 31 August 2012, Figure 7-3, page 41.

⁴³ QUU, *QCA Interim Price Monitoring; Information Return 2012/13*, 31 August 2012, page 42.

- *skills and knowledge are improved across the organisation through staff participation in reviews; and*
- *the lessons learned are effectively captured and used to improve the success of other projects.”*

Halcrow considers that QUU’s capital planning processes provide a platform for ensuring prudence and efficiency in the development and delivery of its capital program. The implementation of these processes has been assessed as part of the detailed review of a sample of capital projects/programs (refer **Section 6**); in general, they have been found to be effectively implemented.⁴⁴

4.4.4.4 Operational Maintenance Planning

It is understood that QUU has documented plans and strategies that outline its approach to asset maintenance management. These include:⁴⁵

- Asset Management Plans – define the levels of service and performance requirements and outline the lifecycle strategy for each asset class;
- Maintenance Strategies – define maintenance requirements; and
- Maintenance Plans – define the specific maintenance activities.

Maintenance delivery strategies implemented in respect of various asset classes are as follows:⁴⁶

- Periodic maintenance:
 - recurrent preventative works carried out at pre-determined intervals;
 - implemented for sewage pumping station mechanical and electric components, water pumping/booster stations and sewerage treatment plants.
- Condition based:
 - proactive corrective work undertaken on the basis of condition and/or performance;
 - implemented for trunk sewers, sewer rising mains, sewage pumping station civil works, water trunk network and reservoirs.
- Run to fail:
 - adopted where the consequence of asset failure is considered to have minimal impact;
 - implemented for sewer and water reticulation;
- Design out/Replace:
 - where asset is no longer providing the required level of service and/or has reached the end of its functional life, it is renewed or rehabilitated;
 - implemented in respect of all asset classes (as appropriate).

These maintenance strategies are consistent with those typically adopted by water companies, and are expected to provide the basis for an optimal maintenance approach.

⁴⁴ Summary comments arising from Halcrow’s review of capital projects/programs are presented in **Section 6.5**.

⁴⁵ QUU, *Maintenance Planning (Reference TEM142)*, 2012.

⁴⁶ Ibid.

Implementation of these strategies involves four (4) basic approaches to maintenance; annual budgets are compiled on this basis:

- Planned Schedule Maintenance – a planned maintenance schedule is developed for each maintainable asset; the budget is developed on the basis of the activities required.
- Corrective Maintenance – historical expenditure trends are cross referenced against the results of scheduled inspections to develop the forward budget.
- Responsive Maintenance – historical expenditure trends for each asset class and work type are analysed and the budget developed accordingly.
- Specific Project Maintenance – these projects (which may include safety improvements, minor modifications, etc) are identified, justified and budgeted as separate non-capitalised projects.

These maintenance strategies and the manner in which they are implemented are consistent with those typically adopted by water companies, and are expected to provide the basis for an optimal maintenance approach. Halcrow notes, however, that its detailed review of operating expenditure has revealed that QUU is currently in the process of implementing a more proactive approach to its maintenance activities (this has been identified as a new initiative)⁴⁷ which, in the short term at least, is driving increases in operating expenditure.

4.4.4.5 Asset Management Benchmarking

QUU has once again (in 2012) participated in the Water Services Association of Australia's (WSAA's) benchmarking of asset management practised by Australian and overseas water utilities. This process involves the validation by independent consultants of a self-assessment undertaken by the subscribing water utilities in respect of their asset management practices.

WSAA's Aquamark Asset Management Benchmarking Framework is used as the basis of the assessment. Previous benchmarking has been undertaken in 2004 and 2008, which is prior to the establishment of Queensland Urban Utilities. It is understood that Brisbane Water (Brisbane City Council), which was previously responsible for some 85 percent of QUU's asset portfolio, had previously participated in the WSAA Benchmarking process.

Under the process, asset management practices and performances are assessed against seven (7) primary functions, as follows:

1. Corporate policy and business planning;
2. Asset capability and forward planning;
3. Asset acquisition;
4. Asset operation;
5. Asset maintenance;

⁴⁷ Refer **Section 5.2.6.6** for further discussion.

6. Asset replacement and rehabilitation;
7. Business support systems.

A draft report⁴⁸ on its asset management performance has been provided to QUU for internal review. Whilst the report is subject to further input from both QUU and other parties, QUU's asset management processes and systems were generally considered to be mature, having adopted many of the systems previously implemented by Brisbane Water.

From an overall perspective, QUU's performance was assessed to be broadly consistent with the median performance of its peer group, ie. large integrated water and wastewater utilities.

A number of improvement opportunities have been identified; these broadly relate to the further the definition of QUU's Strategic Asset Management Framework and improvement in ongoing monitoring and reporting, specifically in order to inform robust asset management planning. QUU has advised that (once reporting is finalised) these will be captured as Business Improvement Opportunities and appropriate action implemented.

Halcrow anticipates that the implementation of these improvements, specifically the ongoing monitoring and reporting, will result in improved efficiencies through improved maintenance/renewals planning.

4.4.5 Netserv Plan

Once implemented, the Water Netserv Plan will constitute QUU's strategic road map, providing a framework for prudent and efficient infrastructure planning and delivery of services to achieve a safe, secure and affordable water and sewerage service to the community.⁴⁹

The *South-East Queensland Water (Distribution and Retail Restructuring) Act, 2009* sets out the requirements for the Netserv Plan. These include the need to be consistent with the SEQ Regional Plan and planning assumptions, as well as specific requirements in respect of planning, the existing networks and their capacity, proposed increases in network capacity, standards of service, policy in respect of network connections, proposed charges, and the manner in which the service provider proposes to achieve effective outcomes for the provision of water and wastewater services.

Halcrow has undertaken a high level review of QUU's Water Netserv Plan (Part A), which is currently in draft form, and observed that it addresses the requirements of the Act.

⁴⁸ IWA-WSAA, 2012 *Asset Management Performance Improvement Project; Draft Utility Report for Queensland Urban Utilities*, September 2012.

⁴⁹ QUU's Water Netserv Plan (Part A) is available at http://www.urbanutilities.com.au/About_us/Publications_Reports_and_Policies/Reports/

4.5 Budgeting Approach

In its Operation Plan for 2011/12, QUU indicated that its Budget Framework involved consideration of:⁵⁰

- historical trends;
- (outturn) forecasts for the 2012/11 financial year;
- requirements of the Corporate Plan 2010-2015;
- previously announced efficiency targets;
- the Interim Price Monitoring Report from the QCA; and
- the balance of outstanding flood related infrastructure repairs.

Halcrow understands that a similar approach was employed for development of the budget for the 2012/13 financial year; the employment of zero-based budget approach is also noted (specifically in respect of operational maintenance budgeting).⁵¹

The development of QUU's 2012/13 Operating Budget is presented in its Budget documentation,⁵² which references detailed guidelines⁵³ for budget preparation. This document identifies that there are five (5) significant components to the operating cost budget, including:

- Base budget (which is business as usual) – current operations;
- Expense impact of the Capital Budget;
- Expense impacts of the ICT Separation Program and Investment Program;
- New Initiatives; and
- Efficiencies.

It further notes that:

“Each Manager has confirmed that the Business as Usual budget was developed in accordance with those guidelines. Significant review and refinement of the budget has occurred with the Executive Leadership Team. This has involved a functional and account level review of the budget, comparison to the historical trends and forecasts for the 2011/12 year for QUU, consideration of the requirements of the Corporate Plan, previously announced efficiency targets and the Interim Price Monitoring Report from the Queensland Competition Authority.”

A review of the 2012/13 Budget document reveals that it is developed in consideration of forecast demand and service standards, addressing each of the key components outlined above. A comparison is also made to the expenditure forecasts presented in its adopted corporate plan (refer **Section 4.4.2**).

⁵⁰ QUU, *Operational Plan 2011-2012* (Doc ID: MP43(1)), undated..

⁵¹ QUU, *QCA Interim Price Monitoring; Information Return 2012/13*, 31 August 2012, page 35.

⁵² QUU, *Operating Budget Development 2012/13 (Fourth Draft); (post) May Board Meeting 2012*.

⁵³ Budget Guidelines were not sighted in undertaking the review.

As discussed in **Section 4.4.4.3**, QUU's capital expenditure budgets are developed through its capital planning processes. The Gateway Review Process⁵⁴ provides the procedural rigour required to ensure that the project is both prudent and efficient. A risk based prioritisation model is used as part of the justification process.

4.6 Summary

QUU was created in 2010 as a result of the Queensland Government's structural reform of the South East Queensland water sector. It is a council owned distributor-retailer entity derived through the integration of the water businesses of its five constituent councils (Brisbane, Ipswich, Lockyer Valley, Scenic Rim and Somerset).

Given that these structural changes have only recently occurred, QUU operates in a changing environment. A focus of its current activities is the completion of its transition to a new business regime, a process that currently involves separation from its principal constituent, Brisbane City Council; this is expected to be complete by 1 July 2013.

On the basis of Halcrow's review of QUU's management systems and processes, it has made the following observations:

- From an overall perspective, it appears that QUU is organised and undertakes functions that are consistent with other water industry distributor-retailer organisations.
- QUU's operational and capital activities are currently guided by its Strategic Asset Management Plan (SAMP), which is derived from those previously implemented by its constituent councils. The SAMP will be replaced by QUU's Netserv Plan, which is currently in draft form and expected to be finalised before 1 July 2013, as required.
- Strategies in respect of asset management planning appear to be generally in alignment with industry practices, although an optimum balance is yet to be achieved across the full extent of QUU's operations.
- QUU's capital planning processes provide a platform for ensuring prudence and efficiency in the development and delivery of its capital program. The detailed review of a sample of capital projects/programs (refer **Section 6**) indicates that, in general, they have been found to be effectively implemented.
- These maintenance strategies and the manner in which they are implemented are consistent with those typically adopted by water companies, and are expected to provide the basis for an optimal maintenance approach. Halcrow notes, however, that its detailed review of operating expenditure has revealed that QUU is currently in the process of implementing a more proactive approach to its maintenance activities which, in the short term at least, is driving increases in operating expenditure.

⁵⁴ QUU, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, Figure 7-3, page 41.

- QUU's operational budgeting process involves the development of a base (business as usual) budget using a zero based approach and reference to historical trends. Adjustments are then made for extraordinary items such as new initiatives and to incorporate efficiencies.

In summary, QUU's management systems and approach are generally consistent with other water industry distributor-retailer organisations. On this basis, Halcrow is of the view that QUU implements an appropriate management platform to facilitate operational prudence and efficiency. Achievement of these outcomes is, however, dependent upon effective implementation of the processes and procedures that comprise the detail of these systems.

5 Operating Expenditure

5.1 Overview

Queensland Urban Utilities (QUU) has reported actual and forecast regulated operating expenditure of \$2,621.4 million (\$nominal) over the five (5) year period from 2010/11 to 2014/15 with \$535.2 million forecast in 2012/13, as shown in Table 5.1. If bulk water purchases are excluded, regulated operating expenditure over the period amounts to \$1,266.6 million (\$nominal) with \$265.4 million in 2012/13.

Table 5.1: Actual and Forecast Operating Expenditure (\$'000 nominal)

Service	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Expenditure 2010/11 to 2014/15
Total Operating Expenditure	359,389	405,517	467,045	536,290	581,483	647,451	2,637,786
Non-regulated	14,031	11,866	1,108	1,107	1,149	1,189	16,419
Total Regulated Operating Expenditure	345,358	393,651	465,937	535,183	580,335	646,262	2,621,368
Bulk Water	150,120	183,027	225,449	269,822	314,605	361,872	1,354,775
Total Regulated Operating Expenditure (excl. Bulk Water)	195,238	210,624	240,488	265,361	265,730	284,390	1,266,593

Forecast total regulated expenditure in 2012/13 is an increase of 14.9 percent over 2011/12. If bulk water purchases are excluded, the increase is 10.3 percent, which is significantly in excess of forecast escalation of 2.5 percent (ie. an increase of 7.8 percent in real terms).

The share of bulk water costs of total operating expenditure is growing as bulk water costs are increasing at a faster rate than other operating expenditure components. The cost of bulk water as a proportion of total operating expenditure increases from 46 percent in 2010/11 to 56 percent in 2014/15.

The cost of bulk water is a combination of the rate charged (\$/ML) and the volume purchased (ML). The rate charged is set by the Government and is a pass through item for QUU. The volume purchased can be influenced by QUU through improved leakage control, taking action to reduce theft⁵⁵, demand management measures (installing low flow shower heads), water recycling, water pricing (both level and structure) and the rate at which services are made available to cater for growth.

⁵⁵ QUU is targeting a reduction in non revenue water from 13 to 12.5 percent of total water purchases in 2012/13. This remains high by interstate standards. Source: QUU Interim Price Monitoring Information Return, August 2012, table 5.4.1.

However, the major factors affecting demand in the short term are weather conditions and whether water restrictions are in place.⁵⁶

A significant factor in the increase in QUU's operating expenditure (excluding bulk water) in 2012/13 is the one-off cost of separation from Brisbane City Council systems and services (refer **Section 5.3.4** for discussion of these costs). Whilst not able to be quantified on the basis of the information available, Halcrow considers it reasonable to expect that once new systems and service arrangements are put in place, future costs for these items will reduce below the level that would have been incurred if the separation did not occur.

5.2 Overall Assessment of Forecast Expenditure

5.2.1 Introduction

Whilst Halcrow's review of QUU's operating expenditure is focussed on a sample of expenditure components (refer **Section 5.3**), an initial assessment has been undertaken from an overall perspective. In particular, Halcrow has:

- Considered the breakdown of expenditure by service, component (expenditure type) and region;
- Assessed the relative change in expenditure on the basis of the volume of water supplied and the number of properties serviced by sewerage services;
- Identified the drivers of expenditure increases and assessed the impact of:
 - 'business as usual' increases;
 - efficiency opportunities and new initiatives adopted by QUU;
 - adopted levels of service; and
- Compared the current and past expenditure forecasts.

The following analysis concentrates on regulated operating expenditure excluding the cost of bulk water purchases, ie. those items over which QUU can exercise the most control.

5.2.2 Operating Expenditure by Service

A breakdown of the total regulated operating expenditure by service is shown in **Table 5.2**. **Table 5.3** shows the percentage share of total expenditure by service, whilst **Table 5.4** shows the year-on-year percentage change (on the basis of \$nominal) for each service share.

⁵⁶ Water demand forecasts are the subject of separate consultancy let by the QCA.

Table 5.2:⁵⁷ QUU Total Regulated Operating Expenditure by Service (\$'000 nominal)

Service	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Water (excl. Bulk Water)	79,406	64,815	95,340	112,395	109,179	115,494
Wastewater	98,708	124,140	124,282	131,233	134,280	144,787
Trade Waste	17,125	21,669	20,866	21,734	22,271	24,109
Total Regulated Operating Expenditure (excl. Bulk Water)	195,238	210,624	240,488	265,361	265,730	284,390
Bulk Water	150,120	183,027	225,449	269,822	314,605	361,872
Total Regulated Operating Expenditure	345,358	393,651	465,937	535,183	580,335	646,262

Table 5.3: Percentage Share of Expenditure by Service (excluding Bulk Water Costs)

Service	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Water (excl. Bulk Water)	40.7%	30.8%	39.6%	42.4%	41.1%	40.6%
Wastewater	50.6%	58.9%	51.7%	49.5%	50.5%	50.9%
Trade Waste	8.8%	10.3%	8.7%	8.2%	8.4%	8.5%
Total Regulated Operating Expenditure (excl. Bulk Water)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Bulk Water as % of Total Operating Expenditure	43.5%	46.5%	48.4%	50.4%	54.2%	56.0%

Table 5.4: Percentage Change in Expenditure by Service

Service	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Water (excl. Bulk Water)	-	-18.4%	47.1%	17.9%	-2.9%	5.8%
Wastewater	-	25.8%	0.1%	5.6%	2.3%	7.8%
Trade Waste	-	26.5%	-3.7%	4.2%	2.5%	8.3%
Total Regulated Operating Expenditure (excl. Bulk Water)	-	7.9%	14.2%	10.3%	0.1%	7.0%
Bulk Water	-	21.9%	23.2%	19.7%	16.6%	15.0%
Total Regulated Operating Expenditure	-	14.0%	18.4%	14.9%	8.4%	11.4%

⁵⁷ QUU return to QCA, Table 5.11.1, dated 31 August 2012.

The figures presented in these tables reveal the following:

- Operating expenses incurred providing wastewater and trade waste services comprise 57.6 percent of the total regulated operating expenditure (excluding bulk water) in 2012/13, whilst expenses incurred providing water services (distribution and retail) comprise the remaining 42.4 percent.
- Expenses incurred providing water services increase by 17.9 percent in 2012/13; these are the major contributor to the overall increase and follow a 47 percent increase in the prior year. The high increase is common to labour, electricity and other materials and services. Given the characteristics of the water supply distribution and retail system and associated electricity contracts, higher increases in electricity charges for water could be expected. QUU advises⁵⁸ that the increases in water relative to wastewater expenses in 2012/13 are primarily due to:
 - an increase in planned maintenance for water assets in 2012/13 compared to 2011/12;
 - a reduction of \$3.5 million in flood recovery responsive works in wastewater;
 - an increase of \$1.1 million in the reservoirs maintenance program;
 - budget reallocations of \$1 million between water and wastewater costs for items such as land taxes and electricity charges in 2012/13;
 - a reduction of \$722,000 in sewer overflow works; and
 - a reduction of \$400,000 in the sewer renewals program.

These explanations are considered more fully in the detailed analysis outlined below.

- With an increase of almost 20 percent, the 2012/13 increase in bulk water costs is significantly greater than the increase in the remaining services which amounts to a little over 10 percent.
- Whilst excluded from this analysis, it is noted that there is negligible change in the cost of providing non-regulated services in 2012/13.

5.2.3 Operating Expenditure by Expenditure Component

QUU has raised doubts about the accuracy of its cost allocations by service.⁵⁹ An alternative is to analyse costs by expenditure component (or type). A selection of these major expenditure components are analysed in more detail later in the report (refer **Section 5.3**).

A breakdown of the total regulated operating expenditure by component is shown in **Table 5.5**. **Table 5.6** shows the percentage share of total expenditure by component, whilst **Table 5.7** shows the year-on-year percentage change (again on the basis of \$nominal) for each component share.

⁵⁸ QUU response to Halcrow's Request for Information (QUU RFI-2) (attachment to email dated 26 November 2012).

⁵⁹ QUU email dated 18 October 2012 and QUU response to Halcrow's Request for Information (QUU RFI-2) (attachment to email dated 26 November 2012).

Table 5.5:⁶⁰ QUU Total Regulated Operating Expenditure by Line Item (\$'000 nominal)

Expenditure Component/Type	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Employee Expenses	67,466	92,930	84,309	96,778	98,350	102,037
Electricity Charges	9,461	11,596	10,568	11,148	11,883	13,318
Other Materials and Services	106,219	83,936	129,830	144,183	141,700	154,671
Miscellaneous	12,093	22,161	15,781	13,253	13,797	14,364
Total Regulated Operating Expenditure (excluding Bulk Water)	195,238	210,624	240,488	265,361	265,730	284,390

Table 5.6: Percentage Share of Expenditure by Line Item (excluding Bulk Water Costs)

Expenditure Component/Type	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Employee Expenses	34.6%	44.1%	35.1%	36.5%	37.0%	35.9%
Electricity Charges	4.8%	5.5%	4.4%	4.2%	4.5%	4.7%
Other Materials and Services	54.4%	39.9%	54.0%	54.3%	53.3%	54.4%
Miscellaneous	6.2%	10.5%	6.6%	5.0%	5.2%	5.1%
Total Regulated Operating Expenditure (excluding Bulk Water)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 5.7: Percentage Change in Expenditure by Line Item

Expenditure Component/Type	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Employee Expenses	-	37.7%	-9.3%	14.8%	1.6%	3.7%
Electricity Charges	-	22.6%	-8.9%	5.5%	6.6%	12.1%
Other Materials and Services	-	-21.0%	54.7%	11.1%	-1.7%	9.2%
Miscellaneous	-	83.3%	-28.8%	-16.0%	4.1%	4.1%
Total Regulated Operating Expenditure (excluding Bulk Water)	-	7.9%	14.2%	10.3%	0.1%	7.0%

Analysis of the figures presented in these tables reveal the following:

- Other materials and services comprise 54.2 percent of total regulated operating expenditure (excluding bulk water) in 2012/13 and are the largest component. They are forecast to increase by 11.1 percent or \$14.4 million in 2012/13 following an increase of almost 55 percent in 2011/12 (refer Section 5.3.5 for further discussion).

⁶⁰ QUU return to QCA, Table 5.11.1, dated 31 August 2012.

- Employee expenses are the next largest component (at 36.5 percent of total) and increase by 14.8 percent or \$12.5 million in 2012/13. This follows a fall of just over 9 percent in 2011/12 (refer Section 5.3.2 for further discussion).
- Expenditure on electricity rises (4.5 percent) again after a prior year fall of just under 9 percent (refer to Section 5.3.3 for further discussion), however, this accounts for only 4.2 percent of total regulated operating expenditure (excluding bulk water costs).
- Having fallen by almost 30 percent in 2011/12, miscellaneous expenses are forecast to fall a further 16 percent in 2012/13 before minor increases in the following years. QUU advises⁶¹ that these reductions are primarily due to the fall in drought related expenditure.

5.2.4 Operating Expenditure by Region

It is also appropriate to assess the allocation of regulated operating expenditure by region (or municipality). A breakdown of the total regulated operating expenditure by region is shown in Table 5.8. Consistent with the assessments outlined above, Table 5.9 shows the percentage share of total expenditure by region, whilst Table 5.10 shows the year-on-year percentage change (on the basis of \$nominal) for each regional share.

Table 5.8:⁶² QUU Total Regulated Operating Expenditure by Region (\$'000 nominal)

Region	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Brisbane	152,400	177,503	191,343	203,917	202,943	218,553
Ipswich	32,922	22,772	34,250	43,960	45,529	47,816
Lockyer Valley	4,577	2,949	4,978	6,205	6,176	6,459
Scenic Rim	3,617	3,803	6,435	6,935	7,187	7,482
Somerset	1,721	3,596	3,483	4,345	3,894	4,081
Total Regulated Operating Expenditure (excluding Bulk Water)	195,238	210,624	240,488	265,361	265,730	284,390

⁶¹ QUU response to Halcrow's Request for Information (QUU RFI-2) (attachment to email dated 26 November 2012).

⁶² QUU return to QCA, Table 5.11.1, dated 31 August 2012.

Table 5.9: Percentage Share of Expenditure by Region

Region	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Brisbane	78.1%	84.3%	79.6%	76.8%	76.4%	76.8%
Ipswich	16.9%	10.8%	14.2%	16.6%	17.1%	16.8%
Lockyer Valley	2.3%	1.4%	2.1%	2.3%	2.3%	2.3%
Scenic Rim	1.9%	1.8%	2.7%	2.6%	2.7%	2.6%
Somerset	0.9%	1.7%	1.4%	1.6%	1.5%	1.4%
Total Regulated Operating Expenditure (excluding Bulk Water)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 5.10: Percentage Change in Expenditure by Region

Region	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Brisbane	-	16.5%	7.8%	6.6%	-0.5%	7.7%
Ipswich	-	-30.8%	50.4%	28.4%	3.6%	5.0%
Lockyer Valley	-	-35.6%	68.8%	24.7%	-0.5%	4.6%
Scenic Rim	-	5.1%	69.2%	7.8%	3.6%	4.1%
Somerset	-	108.9%	-3.2%	24.8%	-10.4%	4.8%
Total Regulated Operating Expenditure (excluding Bulk Water)	-	7.9%	14.2%	10.3%	0.1%	7.0%

Analysis of the figures presented in these tables reveal the following:

- Brisbane is the by far the dominate region, attracting almost 77 percent of the total regulated operating expenditure in 2012/13; Ipswich follows with approximately 14 percent. The remaining regions, ie. Lockyer Valley, Scenic Rim and Somerset, together attract a mere 6.6 percent of total.
- Brisbane attracts \$12.6 million or 51 percent of the increase in operating expenditure in 2012/13. Ipswich, with the largest percentage increase of 28.4 percent, contributes \$9.7 million or 39 percent of the increase.
- Ipswich (+3.8 percent per year) is growing at a faster rate than Brisbane (+1.6 percent); this is reflected by increases in its share of total expenditure.⁶³

QUU has provided the following explanation⁶⁴ for these variations between regions:

⁶³ QUU email dated 22 October 2012, growth in customer numbers.

⁶⁴ QUU response to Halcrow's Request for Information (QUU RFI-2) (attachment to email dated 26 November 2012).

- Labour:

“The increase in employee costs budgeted to the Brisbane region primarily relates to the replacement of the external provider of the Call Centre with an in-house Call Centre. All Call Centre costs were previously allocated to external services. The in-house Call Centre budget now consists mostly of QUU labour costs (96%). QUU estimates that 86% of Call Centre activity will be for the Brisbane region, compared to 11% for Ipswich and 1% each for the remaining regions. The Call Centre implementation has resulted in an increase in the Brisbane labour cost budget of \$1.5m compared to the Ipswich labour budget of \$192k.

There have also been reductions in wastewater labour costs for the Ipswich region due to budget reallocations in 2012/13 between water and wastewater costs for mechanical and electrical support costs, laboratory testing and developer services.”
- Other materials and services:

“... the disproportionate increase for Ipswich for 2012/13 is primarily driven by the Planned Maintenance program – this is due to the implementation of the planned maintenance strategy to mirror that of Brisbane’s asset management. This subsequently leads to a larger increase in relation to Ipswich due to the smaller base for 2011/12.”

Whilst acknowledging QUU’s explanations, Halcrow questions the manner in which Call Centre costs, ie. the cost of the externally provided service, were previously allocated. QUU has indicated that the cost allocation information provided to it following separation was limited and that it has been actively working to develop more accurate approaches, specifically in respect of its Other Materials and Services expenditure. This infers that prior allocation of cost associated with the Call Centre may not have been appropriate.

The increase in expenditure for Ipswich as QUU seeks to replicate its broader approach to maintenance with the Ipswich region appears feasible.

5.2.5 Unit Cost Increases

In order to assess the impact of changes in total regulated operating expenditure at a unit service level, an assessment has been undertaken to allocate expenditure on the basis of the volume of water purchased by QUU, and by the number of properties to which wastewater services are provided (as an indicator of the change in customer numbers).

This analysis is presented in **Table 5.11**, which shows year-on-year movement for both of the indicators; it shows that on the basis of both measures, unit costs are increasing at rates greater than general inflation, as measured by changes in the CPI.⁶⁵ More specifically:

- Total regulated operating expenditure (per unit of water purchased) increases by 6.7 percent (to \$2.03 per kilolitre) in 2012/13, which compares to forecast CPI increase of approximately 2.5 percent; and
- Total regulated operating expenditure (per number of wastewater properties) increases by 8.6 percent to \$530.03 per property in 2012/13.

⁶⁵ QUU has assumed a general increase of 2.5 percent in the cost of inputs. Email dated 22 October from QUU. Document titled “Queensland Urban Utilities 2012-13 Budget”, page 7.

The difference between the two indicators is driven largely by the assumed growth in water consumption per customer, which follows the constraint exercised during the recent years of drought.

Table 5.11: Analysis of Expenditure Variances – Total Regulated Operating Expenditure (excluding Bulk Water)

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Total Regulated Operating Expenditure (excluding Bulk Water)	195,238	210,624	240,488	265,361	265,730	284,390
Drinking Water Purchases (ML)	98,510	120,314	126,456	130,834	134,887	139,089
\$/kL	1.98	1.75	1.90	2.03	1.97	2.04
% change		-11.7%	8.6%	6.7%	-2.9%	3.8%
Wastewater Properties Serviced (No)	414,674	484,663	492,741	500,650	508,724	516,968
\$/property	470.82	434.58	488.06	530.03	522.35	550.11
% change		-7.7%	12.3%	8.6%	-1.5%	5.3%

Source Worksheet 5.4.1; Interim Price Monitoring Information Return 2012/13 – Data Template

A similar analysis, but based on operating expenditure incurred in providing regulated water supply services (excluding the cost of bulk water) and wastewater services respectively, is presented in Table 5.12. This again shows increases substantially in excess of general inflation, with specific increases in 2012/13 as follows:

- Water related operating expenditure (excluding bulk water costs) per unit of water purchased increases by 13.9 percent to \$0.86 per kilolitre; and
- Wastewater related operating expenditure per number of wastewater properties increases by 3.9 percent to \$262.13 per property.

Table 5.12: Analysis of Expenditure Variances –Service Related

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Water (excl. Bulk Water) Expenditure	79,406	64,815	95,340	112,395	109,179	115,495
Drinking Water Purchases (ML)	98,510	120,314	126,456	130,834	134,887	139,089
\$/kL	0.81	0.54	0.75	0.86	0.81	0.83
% change		-33.2%	40.0%	13.9%	-5.8%	2.6%
Wastewater Expenditure	98,708	124,140	124,282	131,233	134,280	144,787
Wastewater Properties Serviced (No)	414,674	484,663	492,741	500,650	508,724	516,968
\$/property	238.04	256.14	252.22	262.13	263.95	280.07
% change		7.6%	-1.5%	3.9%	0.7%	6.1%

Source Worksheet 5.4.1; Interim Price Monitoring Information Return 2012/13 – Data Template

It is noted that the unit rate increase of 13.9 percent in the cost of providing water supply services in 2012/13 reflects a 17.9 percent increase in total water expenditure (excluding bulk water) and a 3.5 percent increase on the total volume of water purchased. As shown in **Table 5.12**, this follows a more significant unit rate increase of 40 percent in 2011/12, which reflects an increase of 47 percent in expenditure against a 5 percent increase in the volume of water supplied.

To provide a basis for comparison, it is noted that the equivalent unit rates for Unitywater are as follows:

- Water related operating expenditure (excluding bulk water costs) per unit of water purchased is forecast to decrease by 4.3 percent to \$0.74 per kilolitre in 2012/13; this follows a decrease of 13.0 percent in 2011/12; and
- Wastewater related operating expenditure per number of wastewater properties is forecast to decrease by 0.3 percent to \$292.01 per property; this follows a decrease of 3.6 percent in 2011/12.

On the basis these indicators, the unit cost of providing water services (excluding bulk water costs) is 16 percent higher for QUU than for Unitywater, whilst the unit cost of providing wastewater services by QUU is approximately 10 percent less than incurred by Unitywater. A brief assessment of the extent of infrastructure operated in each case reveals that:

- In respect of the water supply systems – Unitywater has roughly double the number of reservoirs, 17 percent more pumping stations and 37 percent greater pipeline length per megalitre of water delivered than Queensland Urban Utilities; and
- In respect of the sewerage systems – whilst the length of sewerage pipeline per property is similar for both entities, the ratio of treatment plants per property is approximately 10 percent greater for Unitywater and the number of pumping stations per property for Unitywater is approximately four (4) times the equivalent ratio for Queensland Urban Utilities.

These broad analyses suggest that QUU's costs of providing both water and, more specifically, wastewater services are less efficient than for Unitywater

5.2.6 Drivers of the Variation in Operating Expenditure

5.2.6.1 General

QUU has identified the factors shown in **Table 5.13**, and their level of contribution, as the key drivers of the variation in its total retail-distribution operating expenditure (excluding bulk water) between 2011/12 and 2012/13.⁶⁶

⁶⁶ QUU submission to QCA, August 2012, Table 8-12, page 57.

Table 5.13: Drivers of Operating Expenditure Variations – Total Operating Expenditure (as identified by QUU)

Driver	Assessed Impact (\$'000)
2011/12 forecast	241,596
less 2011 Flood	-3,981
Base forecast	237,615
plus Business as usual increase	18,726
less Efficiencies	-7,828
2012/13 Base budget	248,513
plus Net new initiatives [#]	17,955
2012/13 Budget	266,468

Note:

[#] Includes \$387,000 efficiency gain in respect of call centre.

Halcrow has reviewed and adjusted the information presented in Table 5.13 to:

- exclude non-regulated expenditure;
- exclude expenditure related to identified new initiatives from the base forecast; and
- exclude the allowance for the efficiency gain in respect of the call centre from the net allowance for new initiatives.

This revised assessment is shown in Table 5.14.

It is not apparent why QUU has added back the expected efficiency gain associated with the call centre, particularly when this is not included in the \$7,828,000 allowance for efficiency gains in 2012/13 (refer Section 5.2.6.5).

Table 5.14: Drivers of Operating Expenditure Variations – Total Regulated Operating Expenditure

Driver	Assessed Impact (\$'000)
2011/12 forecast	240,488
less 2011 Flood	-3,981
less 2011/12 New Initiatives expenditure	-19,412
2011/12 Base forecast	217,095
plus Business as usual increase	18,726
less Efficiencies	-7,828
2012/13 Base budget	227,993
plus 2012/13 New initiatives expenditure [#]	36,988
Adjustment [^]	380
2012/13 Budget	265,361

Note:

[#] Total allowance of \$36,988,000 for New Initiatives in 2012/13 excludes \$387,000 efficiency gain in respect of call centre that was included by QUU in its assessment of the variations for 2011/12 to 2012/13.

[^] Balancing adjustment; comprises \$387,000 included by QUU plus adjustment for discrepancy arising from reported figures.

A brief discussion of each of these key drivers of variation is set out in the following sections. The efficiency of QUU's base line operating expenditure is considered in Section 5.5.

5.2.6.2 Impact of 2011 Flood

QUU has incurred expenditure amounting to approximately \$14.75 million (\$10.77 million in 2010/11 and \$3.98 million in 2011/12) as a consequence of extensive flooding that occurred across its area of operation in early 2011.⁶⁷ Expenditure incurred during 2011/12 related primarily to:⁶⁸

- asset damage at Oxley Creek STP that has resulted in higher sludge handling costs and reduced co-generation of electricity; and
- replacement of small assets that fall below the capitalisation threshold.

It is understood that the reported 2011/12 expenditure reflects actual costs incurred; accordingly it is appropriate for an adjustment to be made for the purposes of determining the base line level of operating expenditure on this basis. Potential future recovery against insurance or other revenue sources is not relevant to this assessment.

⁶⁷ QUU Submission to QCA dated August 2012, Table 8-2, page 50 and Table 8-10, page 55.

⁶⁸ QUU Submission to QCA dated August 2012, page 50.

5.2.6.3 Business as Usual Increases

Business as usual increases in operating expenditure are based on the assumption that the service obligations of the organisation remain the same, however, the cost of providing those services increases in real terms.

QUU has identified \$18.7 million of additional expenditure in 2012/13 as 'business as usual' increases. A breakdown of this amount is presented in Table 5.15. This shows that the increases relate predominantly to labour, but also include allowances for carbon tax and other corporate level expenditure. Reductions (savings) amounting to approximately \$3.8 million are forecast in respect of printing and the write-off of bad and doubtful debts.

Table 5.15: Forecast 'Business as Usual' Increases in 2012/13 (\$'000)

Expenditure Item	Allowance
Employee expenses:	
▪ EBA	4,900
▪ Wage parity, increments etc	1,600
▪ Decrease in capitalised labour	<u>3,900</u>
	10,400
General Inflation to non labour @ 2.5%	3,900
Land tax	2,300
Rent	1,000
Insurance premiums	1,400
ICT desktop support	700
Electricity carbon tax	1,300
Postage	1,950
Printing	-2,300
Bad & Doubtful debts	-1,700
Total	18,950

Note: Figures rounded for the purposes of this analysis

Table 5.15 was derived by Halcrow from various sources of information provided by QUU. There are differences in the timing when various budgets and forecasts were prepared by QUU and this may affect some of the figures in the table. QUU was given the opportunity to confirm the figures, but has not specifically done so.

The increases shown in Table 5.15 are based in part on the cost indexation/escalation factors, which are discussed in Section 5.2.6.4. Explanations for other identified increases are as follows:

- **Land tax:**
QUU received advice from Queensland Treasury confirming that it is liable for payment of Land Tax and that this is covered under the LG Tax Equivalents Regime. The initial review indicates land valuations of \$116 million and a total annual expense of \$2.3 million.

- Insurance premiums:
QUU was previously co-insured with Brisbane City Council. This led to cover problems in the 2011 floods and QUU has sought its own insurance. QUU has sought competitive bids, however, there is a limited market and often the cover for specific matters is shared among a number of underwriters because of capacity shortfall.
- ICT desktop support:
The additional costs are incurred as a result of expanded computer operations and more sophisticated systems.
- Electricity carbon tax:
The impact of the carbon tax on electricity costs is addressed in **Section 5.3.3**. In addition, QUU will be affected by carbon tax impacts on its non electricity purchases. In this regard, it is noted that the Queensland Treasury has made an adjustment of 0.75 basis points to its CPI estimate for 2012/12 (refer **Section 5.2.6.4** (note to **Table 5.17**)).
- Postage and Printing:
These budget adjustments relate in part to the provision of advice notices to customers for new bill structure and revised billing arrangements.
- Bad and Doubtful debts:
Previous forecasts were considered too conservative, particularly in light of improved management of bad and doubtful debts, assisted by more frequent billing and assistance programs.

On the basis of this assessment, the forecast 'business as usual' increases in expenditure for 2012/13 are considered both prudent and efficient. More detailed assessment of specific elements of cost is, however, presented in **Section 5.3**.

5.2.6.4 Escalation of Operating Costs

Overview:

As previously noted, operating expenditure is expressed in \$nominal in this report. In developing its expenditure forecasts for 2012/13 and future years, QUU has adopted the cost escalation/indexation factors shown in **Table 5.16**.⁶⁹

⁶⁹ QUU Submission to QCA dated August 2012, Table 8-10, page 55.

Table 5.16: QUU Assumed Annual Cost Indexation Factors

Expense Group	Cost Index		
	2012/13	2013/14	2014/15
Labour	4.25%	3.70%	3.80%
Electricity	(8.5%)#	4.85%	10.32%
Chemicals	2.50%	2.50%	2.50%
Sludge handling	2.50%	2.50%	2.50%
Other costs	2.50%	2.50%	2.50%

Note:

Excludes carbon price.

Movements in bulk water prices are not reviewed here as they set by the Government and are a pass through item for QUU. Movements in electricity prices are discussed in detail in Section 5.3.3.

Increase in Labour Rates:

Factors underlying QUU's assumed growth in wage/salary rates are as follows:

- the existing Enterprise Bargaining Agreement (EBA) carried over from Brisbane City Council;
- adoption of a policy to standardise wage rates across QUU's area of operations such that employees are paid the same pay for the same work;
- an allowance for increment creep where salaries advance on an annual basis for satisfactory performance; and
- market pressures arising from QUU having to compete to retain existing staff and attract new appointees against other industries utilising a similar skill set.

In 2011/12, the remuneration of key executive management increased by 3.6 percent after increasing by between 6.5 and 10 percent in 2010/11. In addition, performance bonuses are paid, although capped at between 15 and 20 percent of total fixed remuneration.⁷⁰

For comparison, the total remuneration of the Chief Executive Officer of QUU was \$502,000 in 2011/12⁷¹ whilst the total remuneration of the Managing Director of Sydney Water in 2010/11 (latest published figure) was \$613,462.⁷²

In respect of the EBA, QUU has advised that *“the increase (4.25 percent) was based on the previously agreed increase for 2012/13 under the Brisbane City Council EBA which was agreed to*

⁷⁰ QUU Annual Report 2011-12, page 97.

⁷¹ QUU Annual Report 2011-12, page 98.

⁷² Sydney Water Corporation Annual Report 2010-11, page 389.

during 2010. The Brisbane City Council EBA increase was used for Queensland Urban Utilities' EBA because of the significant number of employees that were from Brisbane City Council'.⁷³

QUU further notes⁷⁴ that forward year estimates are based on an assumed rate of inflation plus an allowance of 1.5 percent in accord with past real increases in labour and the organisation's commitment to no growth in employee numbers.

Halcrow notes that Queensland had experienced strong demand for labour driven by the resources sector, although the effect of this has been diminished in South East Queensland by a softening in the tourism and construction sectors.

More recently, weakness in the world economy has adversely affected Queensland pushing its unemployment rate above the Australian average. Queensland Treasury advises⁷⁵ that the trend unemployment reached 5.8 percent in August; this was 0.3 percentage point higher than in December 2011. This figure would have been greater but for the trend participation rate falling to a six year low.

The Queensland Government adopted the assumptions shown in Table 5.17 in its 2012/13 budget.⁷⁶

Table 5.17: Queensland Government Budget Assumptions

	Outcome	Estimate	Forecasts		Projection
	2010-11	2011-12	2012-13	2013-14	2014-15
Gross product	0.2	4	4	3.75	4.5
Unemployment rate	5.5	5.5	6	5.75	5.5
Inflation ¹	3.3	1.9	2.75	2.75	2.75
Wage Price Index	3.9	3.7	3.25	3.5	3.5

Note:

¹ Includes a 0.75 of a percentage point contribution from the carbon tax in 2012-13.

Halcrow acknowledges that QUU was obliged to comply with the pre-commitment in the Brisbane City Council EBA and at the time that EBA was negotiated the labour market was tight with strong demand from the resource sector for many of skills utilised by QUU. It also acknowledges that the weakness in the labour market has become more apparent since the Q2 estimates, which underlie QUU's forecasts, were developed.

However, Halcrow notes that the EBA is due to expire on 16 April 2013 and recommends that QUU adopt Queensland Treasury forecasts for future years. Treasury's forecast change in the wage rate index provides for a margin of a 0.75 of a percentage point above the movement in the CPI (refer Table 5.17).

⁷³ QUU, Response to Halcrow Draft Report (attachment to email dated 9 November 2012).

⁷⁴ QUU submission to QCA, August 2012, page 55.

⁷⁵ Queensland Treasury and Trade, *Queensland Economic Review*, September 2012, page 1.

⁷⁶ Queensland Government, *Budget Strategy and Outlook: 2012-13*, page 34.

Whilst QUU has advised of past gains flowing from changes to shift arrangements, it has not quantified the improvements in labour productivity it has targeted for future years. Future productivity improvements could be expected to, at least in part, offset any real movements in wage/salary rates.

Escalation Rates for Other (Non-Labour) Items:

QUU has adopted escalation rates of 2.5 percent per annum for all other items with the exception of bulk water and electricity. This rate of increase is less than Queensland Treasury's forecasts of movements in the CPI, ie. 2.75 percent per annum in each of years 2012/13, 2013/14 and 2014/15.

Prices for these items have shown significant volatility in recent years. For example, the movement in chemical costs can be assessed on the basis of Producer Price Indexes published by the Australian Bureau of Statistics;⁷⁷ the movement based on three different indexes is shown in Table 5.18.

Table 5.18: Movement in Chemical Cost based on ABS Indexes

Escalation from:	Basic chemical and chemical products (A3343980X)	Basic chemicals (A2309150F)	Other basic chemical products (A3343982C)
2009 to 2010	-26.4%	-40.7%	-23.4%
2010 to 2011	3.5%	7.2%	4.1%
2011 to 2012	7.8%	24.5%	8.1%

Note: Based on June figures.

QUU's forecast 2.5 percent per annum rate of escalation is considered reasonable in the light of slowing economic conditions and the Queensland Treasury's forecast of general inflation as measured by changes in the CPI.

5.2.6.5 Efficiencies adopted in 2012/13

As outlined in Section 5.2.7, in its 2010/11 Interim Price Monitoring Report⁷⁸ the QCA set efficiency targets representing reductions of 2 percent and 1.77 percent respectively off QUU's operating expenditure forecasts for 2011/12 and 2012/13 respectively.

QUU has set a further target requiring a 10 percent efficiency gain to be achieved in accordance with the following timeline:⁷⁹

- 3 percent of the efficiencies identified and implemented ("bankable") by 30 June 2013;

⁷⁷ Australian Bureau of Statistics, *Catalogue 6427.0 – Producer Price Indexes, Australia, Sep 2012*, Series A3343980X – Basic chemical and chemical products; Series A2309150F – Basic chemicals; and Series A3343982C – Other basic chemical products, June figures.

⁷⁸ QCA, *Final Report; SEQ Interim Price Monitoring for 2010/11; Part B – Detailed Assessment*, March 2011.

⁷⁹ QUU response to Halcrow's Request for Information (QUU RFI-2) (attachment to email dated 26 November 2012).

- 10 percent efficiencies identified and implementation plans in place by 1 October 2013; and
- 10 percent efficiencies implemented by 1 October 2014.

This 10 percent efficiency gain, which is to be based on the 2012/13 budget,⁸⁰ has not been included in the figures presented in QUU's Interim Price Monitoring Return.

QUU appointed consultants, Third Horizons Consulting Partners, to identify efficiency opportunities following its formation. Third Horizons reported to the QUU Board in October 2011;⁸¹ in response, QUU prepared the listing shown in Table 5.19, which identifies the efficiencies adopted in preparing the 2012/13 Budget.⁸²

Table 5.19: QUU Adopted Efficiencies (\$'000)

Service Area	Total Budgeted Efficiencies 2012/13*	Labour	Materials, Services, PP&E	Target Efficiencies 2012/13#
QUU Organisation Wide				
Procurement Initiative	3,200	1,000	2,200	3,200
Additional 1% Vacancy Rate (Rate now 3.5%)	1,910	1,910		500
Corporate Services				
Removal of Security Strategist role	113	113		
Finance				
Defined Benefit Superannuation - claimed as an efficiency as portfolio de-risked	1,140	1,140		
Operations				
Manager Strategy and Business Efficiency	189	189		
Afternoon shift - Reduction in overtime \$1.092m offset by increase in ordinary time penalty allowances	576	576		800
Afternoon shift - Reduction of 4 field staff (productivity gain)	300	300		
Electricity Management	400		400	400
Sub-total	7,828	5,228	2,600	4,900
Call Centre Net Efficiency shown in New Initiatives	387	387		
Biosolids - under development and not included in 2012/2013				1,800
Total Efficiencies v's Target	8,215	5,615	2,600	6,700

Note:

* Efficiencies incorporated into 2012/13 budget.

Third Horizon recommendations for efficiency gains in 2012/13.

⁸⁰ QUU clarified that efficiency gains based on operating budget of approximately \$267 million, which excludes bulk water, interest and depreciation costs.

⁸¹ Third Horizons Consulting Partners, *Queensland Urban Utilities; Cost Efficiency Review; Phase 2 – Board Presentation*, 18 July 2011.

⁸² QUU, *Operating Budget Development 2012/13 (Fourth Draft); (post) May Board Meeting 2012*.

Table 5.19 shows Total Budgeted Efficiencies of \$8.215 million to be achieved by QUU in 2012/13, which compares with the Third Horizons target of \$6.7 million. The \$8.215 million includes the call centre savings of \$0.387 million.

Planning of actions to realise the \$1.8 million potential savings identified by Third Horizons in respect of biosolids is still under development; accordingly, this initiative has not been adopted for 2012/13.

Halcrow notes that, in its explanation of the movements in operating expenditure from 2011/12 to 2012/13 (as replicated in **Table 5.13**), QUU has accounted for only \$7.828 million of efficiency gains in 2012/13. Furthermore, it has 'added back' into the total budget an amount equal to the call centre net efficiency gain.

As also shown in **Table 5.19**, QUU has adopted additional efficiency measures to those identified by Third Horizons; these are:

- De-risking of the defined benefits superannuation portfolio;
- Removing the security strategist role; and
- Removing the position of Manager Strategy and Business Efficiency.

It is noted that QUU's identified new initiatives⁸³ include an item 'Strategy Manager and Strategy Analyst' with expenditure of \$452,000 in each of years 2011/12 and 2012/13. This implies, based on the role titles, that the tasks of the deleted jobs ('Manager Strategy and Business Efficiency') are transferred to newly created positions, without necessarily a reduction in employee numbers. A comparison of the claimed efficiency gain (\$189,000) to the annual cost of the new initiative (\$452,000) suggests a possible net increase of at least one employee. In this case, it does not seem reasonable to claim the adjustment as an efficiency gain.

Halcrow initially queried whether two of the adopted measures are properly described as efficiencies. These were:

- Increasing the vacancy rate to 3.5 percent with a claimed saving of \$1.9 million. Whilst it is acknowledged that an organisation of the size of QUU would be expected to experience an ongoing vacancy rate, the proposed 1 percent increase in this rate could be reflective of one of the following:
 - it may simply be a recognition that, in practice, a vacancy rate of 3.5 percent is a more accurate estimate, in which case the difference should appear as a reduction in the base level of operating expenditure (ie. the expenditure was never incurred); or
 - it may represent an actual productivity improvement which, in essence, will result in a reduction in QUU's total establishment level.
- De-risking the defined benefits superannuation. A lower long term return than previously assumed may result from the risk/return trade-off, however, the final outcome will be dependent upon actual market movements.

⁸³ QUU email dated 12 October 2012, folder titled 'New Initiatives'.

On balance, it is considered reasonable to account these measures as efficiency gains to be realised in 2012/13 (and thereafter).

5.2.6.6 'New Initiatives'

The 2012/13 budget incorporates a number of specific 'new initiatives' that are being implemented to enable QUU to deliver on its corporate objectives.⁸⁴ These new initiatives are projects that represent step changes in expenditure that are expected to be incurred over a limited number of years.

The new initiatives, some of which were initiated during 2011/12, are aimed at achieving efficiency gains (eg. New Customer Call Centre) and/or maintaining customer service levels or meeting regulatory requirements.

The forecast 2011/12 expenditure of \$240.488 million (regulated operating expenditure excluding bulk water costs) includes \$19.4 million of expenditure incurred in respect of these new initiatives.⁸⁵ As noted above, many of these initiatives are one-off items that should be excluded from the base forecast; accordingly, they have been removed in order to determine the base level of regulated operating expenditure incurred in 2011/12 (refer **Table 5.14**), and subsequently incorporated as a variation to base line expenditure for 2012/13.

Forecast expenditure on initiatives being introduced or continued in 2012/13 amounts to \$37.0 million, an increase of approximately \$17.6 million over expenditure of \$19.4 million incurred in 2011/12.

The initiatives in the two years costing more than \$0.5 million in at least one of the years are listed in **Table 5.20**.⁸⁶ These initiatives are driven by a combination of:

- Legal requirements (eg. pensioner verification for granting of refunds);
- Improved operations (eg. proactive maintenance); and
- Cessation of Brisbane City Council support (eg. new Contact Centre at a cost of \$2.2 million, which is offset by previous payment of \$2.1 million to the Council in respect of this function).

It is difficult to assign many of the identified initiatives to individual services (eg. water, wastewater) based on the descriptions provided. Many appear to be corporate functions, the cost of which would subsequently be allocated to specific services.

⁸⁴ QUU Submission to QCA dated August 2012, page 30.

⁸⁵ QUU submission to QCA, August 2012, Table 7-4, page 30.

⁸⁶ QUU email dated 12 October 2012, folder titled '2012-13 new initiatives'.

Table 5.20: QUU New Initiatives (\$'000)

Initiatives	2011/12	2012/13	Reason
Portfolio Management Office		869	Third Horizon recommendation
ICT separation (expensed items)		9,961	As per ICT separation program
Safety leadership	840	1,104	To address QUU safety performance
Payroll services		602	Cessation of BCC support
Increased accommodation & rent	745	550	Relocation Brisbane & Ipswich offices
Finance- regulatory requirements	3,004	1,795	New regulatory requirements
ICT investment program (expensed labour)	6,000	5,331	ICT BAU program
New Contact centre		2,176	Cessation of BCC support
Withdrawal BCC Contact Centre		-2,064	Cessation of BCC support
Pensioner verification	190	514	Meet legislative refund need
Enhanced debt management	625	245	Improve debt position
Marketing and Communications	750	217	Build brand equity and promote efficiency programs
Sewer smoke, CCTV testing	667	667	Illegal connections
Sewer Overflow Management	3,300	2,950	Environment & Health
Planned maintenance		7,813	Proactive maintenance program
Utility model development		782	Replace delegated assessment model
Total (listed initiatives)	16,121	33,512	
Other initiatives not listed	3,291	3,476	
Total	19,412	36,988	

A review of the listed initiatives, based on the description provided, leads to the view that some may be more appropriately considered to be business as usual expenses. Halcrow has undertaken an assessment and has identified the initiatives shown in Table 5.21 as being more appropriately defined as business as usual expenditure.

Table 5.21: New Initiatives assessed as Business as Usual (\$'000)

Initiatives	2011/12	2012/13	Reason
Professional Development for the Board	70	22	To provide development opportunities for Board members
Strategy Manager and Strategy Analyst	452	452	To manage growth opportunities for the organisation
Planning Lawyer	133	133	Additional business requirements
ICT investment program (expensed labour)	6,000	5,331	This item is identified as relating to the 'ICT BAU program' (refer to following comments).
Pensioner verification	190	514	Meet legislative refund need
Enhanced debt management	625	245	Improve debt position
Sewer smoke, CCTV testing	667	667	Illegal connections
Planned maintenance		7,813	Proactive maintenance program
Total	8,137	15,177	

Specific reasoning in respect of a selection of the items assessed as business as usual expenditure is as follows:

- Strategy Manager and Strategy Analyst and Planning Lawyer – it appears that these are new positions that will continue to be funded, in which case they should be considered to be business as usual. It is further noted that QUU has identified efficiency savings by removing the position of Manager Strategy and Business Efficiency; on the basis of position titles, it appears that these two allowances would offset against each other.
- ICT investment program (expensed labour) – given that there is considerable expenditure over the two years, this does not appear to be one-off expensing of expenditure previously otherwise accounted. A review of QUU's *ICT Portfolio Plan*⁸⁷ reveals proposed operating expenditure of \$13.54 million, \$5.47 million, \$9.63 million, \$9.43 million and \$12.33 million in 2012/13 and the following four (4) years respectively. The \$13.54 million identified for 2012/13 includes some \$9.96 million associated with the Separation Program; this amount is separately identified as the cost of the ICT Separation Program initiative. It is therefore considered that remaining expenditure (albeit greater than identified in the ICT Portfolio Plan) should more appropriately be assessed as business as usual expenditure.
- Sewer smoke, CCTV testing – Halcrow is of the view that such testing would normally be undertaken as part of business as usual asset management activities, particularly given that QUU has noted that these investigations are undertaken to inform its capital planning.

⁸⁷ QUU, *Annexure E; ICT Portfolio Plan 2012/13 – 2016/17 (Version 2.01)*, 21 August 2012.

- Planned maintenance – whilst Halcrow supports the implementation of a balanced approach to asset maintenance which incorporates a planned maintenance program, this should lead to an optimised level of expenditure without the incurrance of additional costs. It is acknowledged that development and implementation of such a regime requires the implementation of an appropriate asset management system and the collection of relevant asset data (condition and performance related), however, it is understood that the development of such systems forms part of the ICT Separation Program

Whilst other initiatives were initially questioned, Halcrow has subsequently assessed them as being appropriately identified as new initiatives (as opposed to business as usual expenditure), on the following bases:

- Safety leadership – it is understood that this item relates primarily to the implementation of new safety management system following separation. It may also include some allocation for training. Whilst ongoing obligations in respect of Occupational Health and Safety should be considered business as usual, it is considered appropriate that the implementation of new systems be recorded as one-off expenditure.
- Increased accommodation and rent – the description of this item suggests that it relates to increased accommodation rental costs as well as the cost of office relocations. Relocation costs would be considered as a one-off cost (new initiative), however, increased rental costs are expected to be ongoing and therefore a contribution to business as usual costs. In absence of any detail or disaggregation of costs, Halcrow considers (on the basis of company experience) that the amounts nominated are in the expected order of office relocation costs, so are reasonably assessed as one-off expenditure allowances. Halcrow further notes that that identified business as usual increases include an allowance for rent (refer **Table 5.15**).
- Sewer overflow management – QUU has indicated that recent flood events and the results of waterway monitoring have revealed the need to provide additional focus in respect of sewer overflow management. Whilst planning of related activities would normally be expected to be undertaken as business as usual, Halcrow acknowledges that increased focus may well have driven the need for short term activity in respect of assessing and planning for overflow abatement.

On the basis of this review, Halcrow is of the view that some 40 percent of the ‘new initiatives’ identified by QUU (\$8.137 million in 2011/12 and \$15.177 million in 2012/13) would be appropriately identified as ‘business as usual’ expenses.

5.2.6.7 Levels of Service

One driver of expenditure is the targeted level of service.⁸⁸ In the absence of competition, water utilities need to demonstrate (eg. through customer surveys) what level of service customers are willing to pay for.

⁸⁸ Customer levels of service are documented in the Customer Charter (QUU, *Customer Charter; A summary of your rights and responsibilities* (Reference: Q00170-2011, Version 2)). The infrastructure design and performance standards adopted to enable

The Queensland Government released a Customer Water and Wastewater Code on 1 January 2011 directing QUU to adopt a customer service charter and customer service standards⁸⁹. From 1 July 2013, QUU's service standards will be defined in the Water Netserv Plan.⁹⁰

In the interim, customer service standards are based on pre-existing commitments adopted by QUU's constituent Councils.⁹¹ It will take time to achieve uniform levels of service over the entire network. In addition, the 2011 flood disrupted services. Water quality complaints, for example, increased as a consequence.⁹²

Table 5.22 shows a selection of QUU⁹³ and Unitywater⁹⁴ customer service standards and, where published (in the case of QUU), how they performed against these standards in 2011/12.

Table 5.22: Comparison of QUU and Unitywater Service Standards

Indicator	QUU		Unitywater
	Standard	Result	Standard
Water Quality			
Compliance ADWG			≥98%
Complaints	≤8/1000 properties	4.6	(ISO 10002-2006) <10
Incidents	≤10/1000 properties	0.04	(ISO 10002-2006)
Water supply			
Pressure	≥210 kPa Urban areas	#	≥210 kPa
Volume	≥25 L/min	#	≥23 L/min
Customer Service			
Calls answered	≥80% within 30 sec	83% within 20 secs	≥80% within 30 sec
Service connections			
Time to install	≥90% within 15 working days	52%	100% within 15 working days
Continuity of Supply			
Unplanned water interruptions	≤100/1000 properties a year	48	≤15/1000 properties a year
Restoration of supply	≥90% unplanned interruptions ≤ 5 hours	89%	≥90% unplanned interruptions ≤ 5 hours

achievement of these customer standards are governed by the QUU Design Standards, which are based on an extensive collection of source documents (refer: QUU Submission to QCA dated August 2012, Appendix D).

⁸⁹ QUU Submission to QCA, August 2012, page 11.

⁹⁰ QUU Submission to QCA, August 2012, page 8.

⁹¹ QUU Submission to QCA, August 2012, page 8.

⁹² QUU Annual Report, 2011/12, page 18.

⁹³ QUU Annual Report 2011-12, page 18.

⁹⁴ Unitywater submission to QCA, August 2012, page 41. Despite having the above standards in their submission, Unitywater reported against a different set in their annual report.

Indicator	QUU		Unitywater
	Standard	Result	Standard
Response to incidents			
Urgent water	100% ≤1 hr	99%	100% ≤1 hr
Urgent sewer	100% ≤1 hr	97%	100% ≤1 hr
Non-urgent water	100% ≤24 hr	97%	
Non-urgent sewerage	100% ≤24 hr	98%	
Notification planned interruptions	48 hrs notice given	#	48 hrs notice given

Note:

Explanation of policy given but no numeric outcome provided.

QUU's and Unitywater's customer service standards are very similar. QUU performed well against its standards in 2011/12 with the exception of time taken to install new service connections.

The listed standards are also similar to those reported by interstate water utilities, often with slight variations in how standards are defined. As an example of comparative performance, Yarra Valley Water⁹⁵ (a Melbourne distributor/retailer) recorded in 2011/12:

- 5.6 water quality complaints per 1000 customers compared to QUU's 4.6; and
- 96 percent of unplanned water supply interruptions restored within 5 hours compared to QUU's 89 percent.

Based on the outcomes for 2011/12, QUU is performing satisfactorily against its existing standards and the standards are not a key driver of additional expenditure by QUU.

In order to assess customer perception of its performance, QUU conducts monthly surveys of customers' satisfaction with its performance.⁹⁶ QUU tracks favourably against other South East Queensland water utilities but behind interstate utilities, as shown in **Figure 5.1**. QUU has targeted a modest improvement in customer satisfaction, which suggests that it has adopted an acceptable balance in its service level targets.

⁹⁵ Yarra Valley, Annual Report 2011-12, p 59. For a more extensive analysis of the performance of Victorian water utilities see ESC, Water Performance Report, Performance of Urban Water and Sewerage Businesses 2010-11, December 2011.

⁹⁶ QUU email dated 5 October 2012, folder titled 'Brand Index Score'.

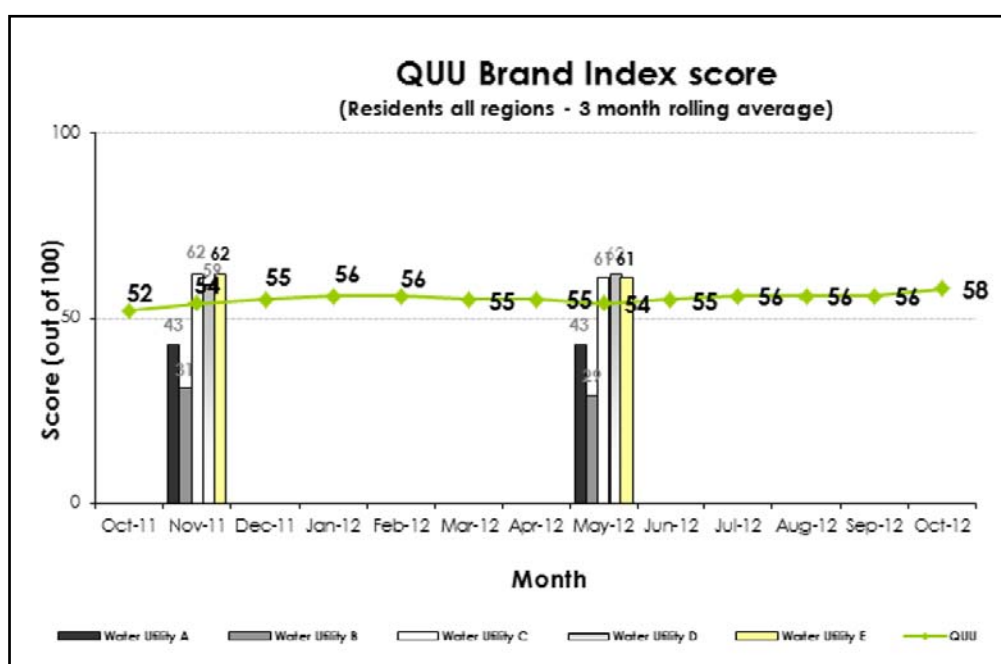


Figure 5.1: QUU Brand Index Score

QUU has provided the following information in respect of its customer survey outcomes:

- “The QUU Brand Index score is a weighted measure of an organisation’s overall brand health based on customer perceptions of performance against QUU’s brand drivers; value, transparency, customer focus and reliability.
- QUU’s brand drivers were identified through customer research (both qualitative and quantitative). The research also identified the importance customers placed on each driver. This determined the weighting for each driver; value 39%, transparency 11%, customer focus 29%, reliability 21%.
- Performance against the QUU brand drivers are tracked monthly through customer surveys.
- The Brand Index result for each month is based on a 3 month rolling average.”

5.2.6.8

Summary Assessment

On the basis of the findings outlined in the preceding sections, Halcrow has been able to make an assessment of:

- the appropriate base (‘business as usual’) level of regulated operating expenditure for 2011/12; and
- the appropriate level of total regulated operating expenditure, including ‘one-off’ or non-recurrent expenditure (principally expenditure on ‘new initiatives’) to be incurred in 2012/13.

Halcrow’s assessment in respect of 2012/13 operating expenditure are summarised (with explanatory comment) in **Table 5.23**.

Table 5.23: Halcrow Assessment of Base and Total Regulated Operating Expenditure

Expenditure Item/Driver	Allowance (\$'000)
2011/12 forecast	240,488
less 2011 Flood	-3,981
less QUU identified 2011/12 New Initiatives expenditure	-19,412
add back 2011/12 New initiatives expenditure deemed Business as usual	8,137
2011/12 Base forecast	225,232
plus Business as usual increase	18,726
less Efficiencies	-7,828
plus incremental increase in New initiatives expenditure deemed Business as usual (\$15,177 less \$8,137)	7,040
2012/13 Base budget	243,170
plus QUU identified 2012/13 New Initiatives expenditure	36,988
less 2012/13 New initiatives expenditure deemed Business as usual	-15,177
2012/13 Budget	264,981

It is noted that Table 5.23 does not incorporate the outcomes of Halcrow's assessment of the prudence/efficiency of the expenditure which is aggregated in Section 5.7.

5.2.7 Achievement of Efficiency Targets

In its 2010/11 Interim Price Monitoring Report,⁹⁷ the QCA set QUU efficiency targets, in addition to efficiencies already achieved, of \$9.49 million in 2011/12 and \$14.15 million in 2012/13, representing 2 percent and 1.77 percent respectively off QUU's forecasts for those financial years. This assessment resulted in the QCA setting efficient levels of operating expenditure at \$445.89 million for 2011/12 and \$495.86 million (including bulk water costs in both cases). On this basis, an incremental efficiency gain in the order of 2 percent is to be achieved in 2012/13.

Halcrow's assessment of QUU's performance in achieving the efficiency targets set by the QCA is summarised in Table 5.24. This analysis indicates that, on the basis of information presented in its 2012/13 Interim Price Monitoring Submission, and taking into account Halcrow's recommended adjustments in respect of the allocation of new initiatives/business as usual expenditure, QUU fails to achieve the nominated targets in either 2011/12 or 2012/13. If actual expenditure incurred in 2011/12⁹⁸ is considered (in conjunction with the recommended adjustments), the target is again not achieved.

⁹⁷ QCA, *Final Report; SEQ Interim Price Monitoring for 2010/11; Part B – Detailed Assessment*, March 2011, page 66.

⁹⁸ Actual expenditure in 2011/12 derived from QUU spreadsheet *QCA 12-13 (Budget) and 11-12 (Actual) Total Costs with QCA definitions.xlsx* included in information pack supplied 12 October 2012.

Table 5.24: Halcrow Assessment of Efficiency Performance (\$million nominal)

Item	2011/12		2012/13
	Based on 2012/13 Submission [#]	Actual Reported [^]	Based on 2012/13 Submission [#]
QUU reported Regulated Operating Expenditure	465.94	462.66	535.18
less Bulk Water	-225.45	-224.19	-269.82
QUU reported Regulated Operating Expenditure (excl Bulk Water)	240.49	238.47	265.36
New initiatives	-19.41	-19.41	-36.99
add back New initiatives expenditure deemed Business as usual	8.14	8.14	15.18
2011 Flood	-3.98	-3.98	-
Baseline Regulated Operating Expenditure	225.24	223.22	243.55
QCA defined target for efficient operating expenditure	445.89	445.89	495.86
Less Bulk Water allowance	230.13	230.13	274.49
QCA defined target (excl Bulk Water)	215.76	215.76	221.37
Variance (actual less target)	9.48	7.46	22.18
Target achievement	x	x	x

Note:

[#] QUU's 2012/13 Interim Price Monitoring Submission.

[^] Reported actual figures adjusted to exclude approximately \$1.1 million of non-regulated expenditure (as reported in the 2012/13 Interim Price Monitoring Submission).⁹⁹

5.2.8 Comparisons with Past Forecasts

Table 5.25 highlights the extent to which QUU has revised upwards its forecasts for 2012/13 (+\$23.20 million or 4.5 percent) and 2013/14 (+\$21.03 million or 3.8 percent) from its 2011/12 Interim Price Monitoring Submission. If bulk water costs are excluded, the increases are \$10.53 million (or 4.1 percent) and \$3.06 million (or 1.2 percent) respectively.

It is noted that the actual 2011/12 figures presented in Table 5.25 include non-regulated costs of around \$1.1 million.¹⁰⁰ If this amount is deducted, regulated operating (excluding bulk water) actually incurred in 2011/12 is approximately 0.8 percent less than forecast in QUU's 2012/13 Interim Price Monitoring Submission, and approximately 0.6 percent greater than forecast in its 2011/12 Submission.

⁹⁹ Reported actual expenditure in 2011/12 derived from QUU spreadsheet *QCA 12-13 (Budget) and 11-12 (Actual) Total Costs with QCA definitions.xlsx* included in information pack supplied 12 October 2012.

¹⁰⁰ Indicative non-regulated costs based on 2011/12 allowance shown in QUU's 2012/13 Interim Price Monitoring Submission.

The most significant impact in 2012/13 and 2013/14 is the increase in expenditure to be incurred in respect of Other Materials and Services. This expenditure component is forecast to increase by \$18.40 million or 14.8 percent for 2012/13 and \$14.56 million or 11.6 percent for 2013/14, and follows similar movement from the 2011/12 Submission forecast for 2011/12. These increases are partly offset by reductions in miscellaneous expenditure.

QUU has explained that, for 2011/12, variations between budget and actual include:¹⁰¹

- *“reductions in electricity, chemical and sludge costs totalling \$4.1 million; and*
- *an increase in the expenses portion of the capital program from \$16.6 million in the budget to the forecast of \$21.8 million (an additional \$5.2 million).”*

QUU has also explained the increase in its forecast expenditure for 2012/13 over its corporate plan (a deterioration of \$12.9 million) as:¹⁰²

“There is a timing difference between when the 2011-16 Corporate Plan was developed and when the 2012/13 budget was finalised. The main difference was the subsequent approval for an increase in planned maintenance for 2012/13 and also the fact that the scope for the separation from BCC was not fully understood or ‘bedded-down’.”

Expenditure in respect of Other Materials and Services is discussed in more detail in **Section 5.3.5**.

¹⁰¹ QUU Submission to QCA, dated August 2012, page 56.

¹⁰² QUU response to Halcrow’s Request for Information (QUU RFI-2) (attachment to email dated 26 November 2012).

Table 5.25: Comparison with Previous Expenditure Forecasts (\$million)

Cost Centre	2011/12				2012/13			2013/14		
	1	2	3	4	5	6	7	8	9	10
	2011/12 Submission	2012/13 Submission	Actual	Difference (Col. 3-2)	2011/12 Submission	2012/13 Submission	Difference (Col. 6-5)	2011/12 Submission	2012/13 Submission	Difference (Col. 9-8)
Employee costs	92.16	84.31	85.34	1.03	96.64	96.78	0.14	100.83	98.35	-2.48
Electricity	11.75	10.57	10.44	-0.13	12.71	11.15	-1.56	13.72	11.88	-1.84
Other Materials & Services	116.84	129.83	131.10	1.27	125.78	144.18	18.40	127.14	141.70	14.56
Miscellaneous	16.33	15.78	12.69	-3.09	19.70	13.25	-6.45	20.98	13.80	-7.18
Total excluding Bulk Water	237.08	240.49	239.57	-0.92	254.83	265.36	10.53	262.67	265.73	3.06
Bulk Water	219.05	225.45	224.19	-1.26	257.15	269.82	12.67	296.63	314.60	17.97
Total including Bulk Water	456.13	465.94	463.76	-2.18	511.98	535.18	23.20	559.30	580.33	21.03

Note: 2011/12 actual figures include non-regulated expenditure (no separate break up available).

5.2.9 Efficiency of the Base Forecast

The efficiency of QUU's base forecast is considered with regard to:

- Its operating systems and processes; and
- Comparisons with other water utilities.

A discussion of the effectiveness of QUU's management systems is presented in **Section 4** and a benchmarking analysis is presented in **Section 5.5**. Whilst these assessments are discussed in more details in the respective sections, Halcrow found that:

- QUU's asset management processes and management systems were generally considered to be robust, having adopted many of the systems previously implemented by Brisbane Water. There are, however, opportunities for improvement in areas that Halcrow considers would lead to greater operational efficiencies; as noted, these include improvement in ongoing monitoring and reporting, specifically in order to inform robust asset management planning.
- The benchmarking assessment indicated that, from a customers perspective, unit costs for both water service provision and in total are significantly greater than its comparators. The impact of increasing costs in providing water services is reflected in all indicators assessed; it is also reflected in the more detailed analysis of expenditure presented in **Section 5.3**.

On this basis, Halcrow has some concerns in respect of the level of efficiency reflected by the adopted baseline forecast. It does, however, recognise that the extensive organisational change that is currently (still) being implemented subsequent to the creation of QUU makes it difficult to assess what the efficient level of baseline expenditure should be.

5.3 Detailed Assessment of Forecast Expenditure

5.3.1 Overview

As part of the review of QUU's proposed operating expenditure, Halcrow undertook a detailed assessment of a sample comprising four (4) expenditure components; these were:

- Employee Expenses;
- Electricity Costs;
- Corporate Costs; and
- Other Materials and Services.

As shown in **Table 5.6**, these expenditure components comprise 95 percent of QUU's operating expenditure (excluding bulk water costs) in 2012/13, and a similar proportion in other years.

Halcrow's detailed assessment of each of the selected expenditure components is set out in the following sections.

5.3.2 Employee Expenses

5.3.2.1 Introduction

Employee expenses are estimated to be \$96.8 million in 2012/13,¹⁰³ as shown in Table 5.26. This is an increase of 14.8 percent over 2011/12 and represents 36.5 percent of total regulated operating expenses excluding the cost of bulk water.

Table 5.26:¹⁰⁴ QUU Employee Expenses – Summary Assessment

	2010/11	2011/12	2012/13	2013/14	2014/15
Total Employee Expenses (\$'000 nominal)	92,930.3	84,308.8	96,777.6	98,350.1	102,037.3
Proportion of Total Regulated Operating Expenditure (excluding Bulk Water)	44.1%	35.1%	36.5%	37.0%	35.9%
Year-on-Year Percentage Change	-	-9.3%	14.8%	1.6%	3.7%

A significant factor in the increase in employee expenses in 2012/13 is the decision by Brisbane City Council to cease providing support services (eg. call centre) under contract.

5.3.2.2 Employee Expenses by Service

Table 5.27, shows a breakdown of employee expenses by service, whilst Table 5.28 shows the year-on-year movement in expenditure in each case.

Table 5.27:¹⁰⁵ QUU Employee Expenses (\$'000 nominal)

	2010/11	2011/12	2012/13	2013/14	2014/15
Water	30,499.0	33,348.2	41,958.6	42,685.0	44,281.1
Wastewater	53,070.7	43,968.4	47,065.7	47,805.5	49,603.3
Trade Waste	9,360.6	6,992.3	7,753.3	7,859.7	8,152.9
Total Employee Expenses	92,930.3	84,308.8	96,777.6	98,350.1	102,037.3

¹⁰³ This differs from the net operating labour figure of \$104.6 million included in the document titled 'Queensland Urban Utilities 2012-13 Budget' forwarded by QUU by email on 22 October 2012. This shows a variation of around \$8.9 million between 2011/12 and 2012/13.

¹⁰⁴ Derived from QUU's Submission to QCA, Table 5.11.1, dated 31 August 2012.

¹⁰⁵ Derived from QUU's Submission to QCA, Table 5.11.1, dated 31 August 2012.

Table 5.28: QUU Employee Expenses – Year-on-Year Percentage Change (based on \$nominal)

	2010/11	2011/12	2012/13	2013/14	2014/15
Water	-	9.3%	25.8%	1.7%	3.7%
Wastewater	-	-17.2%	7.0%	1.6%	3.8%
Trade Waste	-	-25.3%	10.9%	1.4%	3.7%
Total Employee Expenses	-	-9.3%	14.8%	1.6%	3.7%

The employee cost of providing wastewater and trade waste services comprises 56.6 percent of total employee expenses in 2012/13; the cost of providing water services makes up the remaining 43.4 percent.

Employee expenses in providing water services increase by 25.8 percent in 2012/13 and are the major contributor to the overall increase in employee expenses. This reflects the variation in employee numbers between the two services. While the number of direct water employees is increasing by 32 to 259FTE, the number of direct wastewater employees is reducing by 1.5FTE to 349.5FTE.¹⁰⁶ The increase in the number of water employees stems from the additional maintenance effort (planned and reservoir maintenance) while wastewater activity has reduced following completion of the flood recovery response.¹⁰⁷

In addition, water is allocated a greater proportion of the call centre costs (principally labour) in anticipation that call centre enquiries will relate mainly to water in the ratio of 54:46.¹⁰⁸

QUU has advised that the following factors have contributed to the overall increase in employee expenses for 2012/13:¹⁰⁹

- an increase of 103.1 in total FTEs bringing the figure to 1340 FTE, ie. an increase of 8.3 percent, in 2012/13;
- an assumed vacancy rate of 3.5 percent compared with 2.6 percent in 2011/12. Despite this change, the percentage increase in funded positions is also 8.3 percent;
- of the increase of 103.1FTE, 46.1FTE are permanent positions and 57FTE temporary positions;
- the main contributors to the increase in the permanent positions are the staffing of the new call centre (+29FTE) and operations (+9FTE);
- The main contributor to the increase in temporary positions is the increase in IT staff (+51FTE) of which 39FTE are associated with the ICT separation from Brisbane City Council project; and

¹⁰⁶ QUU response to Halcrow's Request for Information (QUU RFI-2) (attachment to email dated 26 November 2012).

¹⁰⁷ Ibid.

¹⁰⁸ Ibid.

¹⁰⁹ QUU email to QCA, dated 28 September 2012.

- an across the board labour efficiency allowance of \$1 million has been included for 2012/13 associated with the procurement initiative (refer Table 5.19).

The above figures imply an increase of 6.3 percent in 2012/13 in employee expenses over and above the increase in the number of funded positions, which is explained largely by:

- Wage rate increases – QUU has applied an employee cost escalation factor of 4.25 percent¹¹⁰ corresponding to the cost indexation figure in the QUU enterprise bargaining agreement (EBA). In addition, it has allowed for increment increases for existing employees, role changes and the parity process (ie. equal pay for identical work across its area of operations).
- A variation in the amount of employee cost that has been capitalised (a reduction of \$3.9 million from 2011/12 to 2012/13).¹¹¹

5.3.2.3 Unit Costs (Employee Expenses) of Service Provision

Table 5.29 shows the change in total employee expenses incurred in providing services relative to both the volume of water purchased by QUU and the number of wastewater serviced properties (as an indicator of the change in customer numbers). This reveals that:

- Employee expenses (per unit of water purchased) increase by 10.9 percent to \$0.74 per kilolitre in 2012/13;
- Employee expenses (per number of wastewater properties) increase by 13.0 percent to \$193.30 per property in 2012/13; and
- In both cases, the movements are substantially in excess of both general inflation and the EBA driven increase in labour rates.

Table 5.29: Analysis of Expenditure Variances – Total Employee Expenses

	2010/11	2011/12	2012/13	2013/14	2014/15
Total Employee Expenses	92,930.3	84,308.8	96,777.6	98,350.1	102,037.3
ML purchases	120,314	126,456	130,834	134,887	139,089
\$/kL	0.77	0.67	0.74	0.73	0.73
% change	12.8%	-13.7%	10.9%	-1.4%	0.6%
Properties Serviced	484,663	492,741	500,650	508,724	516,968
\$/property	191.74	171.10	193.30	193.33	197.38
% change	17.9%	-10.8%	13.0%	0.0%	2.1%

Source Worksheet 5.4.1; Interim Price Monitoring Information Return 2012/13 – Data Template

For comparative purposes, it is noted that the equivalent unit rates for Unitywater are of a similar order (approximately 12 percent variance), as follows:

¹¹⁰ QUU submission to QCA, 31 August 2012, page 55.

¹¹¹ QUU email dated 22 October 2012.

- Employee expenses per unit of water purchased are forecast to decrease by 7.6 percent to \$0.83 per kilolitre in 2012/13; and
- Employee expenses per number of wastewater properties are forecast to decrease by 3.8 percent to \$170.86 per property.

It is, however, noted that Unitywater's unit rate employee expenses are decreasing whilst those of QUU are increasing.

A similar analysis, but based on employee expenses incurred in providing water supply services (excluding the cost of bulk water) and wastewater services respectively, is presented in Table 5.30. This again shows increases substantially in excess of general inflation, with specific increases in 2012/13 as follows:

- Water related employee expenses per unit of water purchased increases by 21.6 percent to \$0.32 per kilolitre; and
- Wastewater related employee expenses per number of wastewater properties increases by 5.4 percent to \$94.01 per property.

Table 5.30: Analysis of Employee Expenditure Variances –Service Related

	2010/11	2011/12	2012/13	2013/14	2014/15
Water Expenditure	30,499.0	33,348.2	41,958.6	42,685.0	44,281.1
Drinking Water Purchases (ML)	120,314	126,456	130,834	134,887	139,089
\$/kL	0.25	0.26	0.32	0.32	0.32
% change	-12.0%	4.0%	21.6%	-1.3%	0.6%
Wastewater Expenditure	53,070.7	43,968.4	47,065.7	47,805.5	49,603.3
Wastewater Properties Serviced (No)	484,663	492,741	500,650	508,724	516,968
\$/property	109.50	89.23	94.01	93.97	95.95
% change	36.5%	-18.5%	5.4%	0.0%	2.1%

Source Worksheet 5.4.1; Interim Price Monitoring Information Return 2012/13 – Data Template

Again for comparative purposes, it is noted that the equivalent unit rates for Unitywater are as follows:

- Water related employee expenses per unit of water purchased are forecast to decrease by 7.2 percent to \$0.29 per kilolitre in 2012/13; this follows a decrease of 15.5 percent in 2011/12; and
- Wastewater related employee expenses per number of wastewater properties are forecast to decrease by 5.9 percent to \$90.48 per property; this follows a decrease of 7.1 percent in 2011/12.

When assessed on this basis, QUU's employee expenses are in the order of 5-10 percent higher than Unitywater's. It is noted, however, that Unitywater's figures exclude employee expenses incurred in providing Corporate services; it also reports significantly higher Contractor expenses than QUU, which would appear to distort comparison. Further analysis reveals that:

- The majority of QUU's contractor costs (including consultancy fees) are reported under the Other Materials and Services category. In 2012/13, QUU has included some \$20.471 million of contractor/consultancy fees under Other Materials and Services, which compares to Unitywater's Contractor expenses of \$13.303 million. Detailed information that would enable assessment as to whether further contractor expenses are included within Unitywater's Other Materials and Services expenditure has not been available for the purposes of this review.

If these contractor expenses are taken into account, QUU's unit cost of providing water services in 2012/13 will be 5 percent greater than for Unitywater whilst the unit cost of providing wastewater services will be approximately the same.

- Information that would enable assessment of the amount of employee expenses incorporated within Unitywater's Corporate Costs has not been available for the purposes of this review, however, a similar proportion to that identified by QUU could be assumed.

In the absence of such information, QUU's unit cost of providing services may be up to 10 percent less than for Unitywater.

Halcrow further notes that, as assessed in **Section 5.2.5**, QUU's networks are less asset intensive (per service unit) than Unitywater's. Given that employee expenses comprise some 36.5 percent of QUU's total operating costs (excluding bulk water), some further efficiencies in terms of unit employee costs would be expected.

5.3.2.4 Employee Expenses by Region

The overall movements in employee expenses mask significant movements in costs attributed to individual regions, as illustrated in **Table 5.31** and **Table 5.32**. The following observations can be made:

- The Brisbane region comprises 71.1 percent of the total employee expenses followed by Ipswich with 15.4 percent. Brisbane's employee expenses increase by 25.4 percent in 2012/13 while the employee expenses attributed to Ipswich reduce by 14.2 percent.
- Employee expenses attributed to Brisbane for water activities increase by 35 percent in 2012/13 while the equivalent figure for Ipswich increases by 0.6 percent.
- Similarly, employee expenses attributed to Brisbane for wastewater activities increase by 18 percent in 2012/13 while the equivalent figure for Ipswich reduces by 23.7 percent.
- In the preceding year employee expenses moved in the opposite direction for the two regions.

The primary factors underlying the variations between the regions are:¹¹²

- QUU estimates that 86 percent of the new internal call centre activity will relate to Brisbane while only 11 percent will relate to Ipswich and 1 percent each to the remaining regions, and has reflected this assumption in its allocations of costs; and

¹¹² QUU response to Halcrow's Request for Information (QUU RFI-2) (attachment to email dated 26 November 2012).

- There have been reduced wastewater labour costs in the Ipswich region flowing from budget reallocations for mechanical and electrical support costs, laboratory testing and developer services.

Table 5.31: Employee Expenses by Region (\$'000 nominal)

Region	Service	2010/11	2011/12	2012/13	2013/14	2014/15
Brisbane	Water	24,680.3	23,856.4	32,209.6	32,701.7	33,912.5
	Wastewater	44,906.4	29,996.3	35,462.0	35,917.0	37,253.4
	Trade Waste	8,635.2	5,768.1	6,819.1	6,906.6	7,163.6
	<i>Total</i>	<i>78,221.9</i>	<i>59,620.8</i>	<i>74,490.7</i>	<i>75,525.3</i>	<i>78,329.6</i>
Ipswich	Water	3,936.9	6,690.4	6,733.5	6,874.7	7,134.9
	Wastewater	5,662.4	9,556.5	7,292.4	7,440.2	7,722.7
	Trade Waste	725.3	1,224.2	934.1	953.1	989.3
	<i>Total</i>	<i>10,324.6</i>	<i>17,471.0</i>	<i>14,960.0</i>	<i>15,267.9</i>	<i>15,846.8</i>
Lockyer Valley	Water	743.7	1,134.5	1,182.8	1,220.8	1,269.9
	Wastewater	477.6	1,423.9	1,360.0	1,402.6	1,459.0
	Trade Waste	-	-	-	-	-
	<i>Total</i>	<i>1,221.3</i>	<i>2,558.3</i>	<i>2,542.8</i>	<i>2,623.4</i>	<i>2,728.9</i>
Scenic Rim	Water	868.6	1,058.9	1,058.3	1,091.4	1,135.3
	Wastewater	1,354.2	2,013.0	1,937.5	2,003.2	2,083.6
	Trade Waste	-	-	-	-	-
	<i>Total</i>	<i>2,222.8</i>	<i>3,071.9</i>	<i>2,995.9</i>	<i>3,094.6</i>	<i>3,218.9</i>
Somerset	Water	269.6	608.1	774.5	796.3	828.4
	Wastewater	670.0	978.8	1,013.7	1,042.5	1,084.6
	Trade Waste	-	-	-	-	-
	<i>Total</i>	<i>939.7</i>	<i>1,586.8</i>	<i>1,788.2</i>	<i>1,838.8</i>	<i>1,913.0</i>
Total	Water	30,499.0	33,348.2	41,958.6	42,685.0	44,281.1
	Wastewater	53,070.7	43,968.4	47,065.7	47,805.5	49,603.3
	Trade Waste	9,360.6	6,992.3	7,753.3	7,859.7	8,152.9
Total		92,930.3	84,308.8	96,777.6	98,350.1	102,037.3

**Table 5.32: Employee Expenses – Year-on-Year Percentage Change by Region
(based on \$'000 nominal)**

Region	Service	2010/11	2011/12	2012/13	2013/14	2014/15
Brisbane	Water	-	-3.3%	35.0%	1.5%	3.7%
	Wastewater	-	-33.2%	18.2%	1.3%	3.7%
	Trade Waste	-	-33.2%	18.2%	1.3%	3.7%
	<i>Total</i>	-	-23.8%	24.9%	1.4%	3.7%
Ipswich	Water	-	69.9%	0.6%	2.1%	3.8%
	Wastewater	-	68.8%	-23.7%	2.0%	3.8%
	Trade Waste	-	68.8%	-23.7%	2.0%	3.8%
	<i>Total</i>	-	69.2%	-14.4%	2.1%	3.8%
Lockyer Valley	Water	-	52.5%	4.3%	3.2%	4.0%
	Wastewater	-	198.1%	-4.5%	3.1%	4.0%
	Trade Waste	-	-	-	-	-
	<i>Total</i>	-	109.5%	-0.6%	3.2%	4.0%
Scenic Rim	Water	-	21.9%	-0.1%	3.1%	4.0%
	Wastewater	-	48.6%	-3.7%	3.4%	4.0%
	Trade Waste	-	-	-	-	-
	<i>Total</i>	-	38.2%	-2.5%	3.3%	4.0%
Somerset	Water	-	125.5%	27.4%	2.8%	4.0%
	Wastewater	-	46.1%	3.6%	2.8%	4.0%
	Trade Waste	-	-	-	-	-
	<i>Total</i>	-	68.9%	12.7%	2.8%	4.0%
Total	Water	-	9.3%	25.8%	1.7%	3.7%
	Wastewater	-	-17.2%	7.0%	1.6%	3.8%
	Trade Waste	-	-25.3%	10.9%	1.4%	3.7%
Total		-	-9.3%	14.8%	1.6%	3.7%

5.3.2.5 Opportunities for labour efficiencies

As previously noted (refer Section 5.2.6.5) QUU engaged consultants, Third Horizons, to undertake an efficiency study of QUU's activities. In a report to the QUU Board dated October 2011, Third Horizons¹¹³ states:

¹¹³ Email QUU to QCA, 7 October 2011.

- *“We estimate savings of between \$750k and \$1.15m through improved absenteeism and overtime management.*
 - *Existing roster patterns and high levels of absenteeism are causing excessive overtime and lost productivity in the maintenance division costing QUU in excess of \$1m/ annum.*
 - *We recommend a reduction in administration and logistical overhead through the standardisation of roster arrangements.*
 - *Introducing a new shift would reduce the amount of lost productive time caused by the mandatory 10 hour break.*
 - *Reduced overtime would lead to savings of approximately \$200k.*
 - *Increased productivity through less time lost to the 10 hour break would lead to savings of between \$650k-\$950k.*
- *On average 65% of field staff time is spent in vehicles travelling between jobs and depots. We estimate up to \$1.13m in savings can be realised by eliminating unproductive activities such as depot visits to drop off timesheets.*
 - *There is significant variation in time on task across regions and poor performance against external benchmarks driven by inefficient crew practices and excessive travel times. On average, 65% of field staff time is spent travelling, 23% of which is spent travelling to and from the Cullen Avenue. Depot visits are primarily caused by the need to hand in timesheets and pick up materials. Over 60% of travel in the Brisbane area is done south of the river, despite the depot being located in the north-east of the region.*
 - *Management could explore opportunities to automate job/ time capture via GPS tracking, assess new store locations and improve accountability of team leaders before moving to a more blended model of internal and external sourcing.*
- *Although we have identified a potential savings of \$2.4m in moving to an alternate third party for call centre services, a number of factors including alignment to brand and QUU’s strategic imperative of establishing customer insight indicate that this is an area that requires detailed analysis.*
 - *The existing call centre contract is with Brisbane City Council and they are seeking an increase of \$900k (30% increase) to the current agreement. QUU is assessing the delivery model options; in-house, hybrid or an alternative 3rd party vendor.*
 - *Our initial assessment shows an alternative 3rd party vendor to be the most cost effective option but there are a number of qualitative benefits from moving in-house including brand control and ability to track root cause of customer enquiries. In-house however raises a different set of challenges including how to manage call over-flow. We have conducted a high level review of benefits and considerations however we recommend these be investigated further in a detailed business case before an informed recommendation can be made.”*

5.3.2.6 Actions taken by QUU to improve employee efficiency

In response to the initiatives proposed by Third Horizons (refer **Section 5.3.2.5**), the Executive Leadership Team of QUU has adopted those identified in **Table 5.19**, which also show the expected gross labour savings in the order of \$5.6 million in 2012/13.

5.3.2.7 Consistency of Data

QUU’s Annual Report for 2011/12 (page 75) shows the make-up of Employee Expenses presented in **Table 5.33**.

Table 5.33: Employee Expenses as Reported in QUU Annual Report (\$'000 nominal)

Reported Item	2010/11	2011/12
▪ Salaries and Wages	75,318	76,359
▪ Annual Leave	7,667	7,107
▪ Long Service Leave	(1,276)	3,633
▪ Employee Superannuation Contribution	11,852	11,029
▪ Workers Compensation Premium	760	764
▪ Payroll Tax	4,715	5,002
▪ Other employee related expenses	8,191	8,636
▪ Sub-total	107,227	112,530
▪ Less capitalised cost	(27,018)	(27,933)
▪ Total	80,209	84,597
Number of employees (FTE)	1,077	1,079
Average employee cost (incl. capitalised cost) (\$/FTE)	\$99,561	\$104,291
Average employee cost (excl. capitalised cost) (\$/FTE)	\$74,474	\$78,403

Table 5.33 shows a very different amount (\$27.9 million) for capitalised employee costs in 2011/12 to that shown in Table 5.34 (\$43.4 million), yet the net employee expense figures are very similar.

Table 5.34: Employee Costs 2011/12 Budget v Actual split by Employee and Contractor (\$'000 nominal)

	2011/12 Budget	2011/12 Actual	2011/12 Variance	2012/13 Budget
QUU Employee	121,728.9	113,808.4	7,920.5	128,036.8
Contractor	7,549.6	18,198.0	(10,648.4)	13,452.3
Capitalisation	(43,401.2)	(46,663.1)	3,261.9	(43,532.2)
Total Labour Costs	85,877.2	85,343.3	534.0	97,956.9

Source QUU Spreadsheet (QCA Comparison of employee costs.xlsx) dated 12 October 2012.

QUU has explained this variation as follows:¹¹⁴

“The QCA return has been completed using Management Accounts, not Statutory. In the Statutory Accounts (QUU Annual Report), contract labour [\$18.2m and capitalisation - \$7.2m FY11/12] is excluded from employee expenses and included within Materials and services. In QUU Management Accounts, contract labour is included within employee expenses as for the most part it is incurred while filling a vacancy in QUU’s permanent workforce. A further difference in capitalisation is a portion of overhead cost recovery (both labour and materials & services) that is capitalised through employee expenses as a result of legacy systems and processes.”

¹¹⁴ QUU response to Halcrow’s Request for Information (QUU RFI-2) (attachment to email dated 26 November 2012).

Halcrow has not attempted to reconcile these variations but merely highlight differences between the statutory audited accounts and the information presented in the return to the QCA. In particular, Halcrow notes that a portion of overhead cost recovery including materials and services is capitalised as labour. QUU has not quantified the amount and its associated materiality.

5.3.2.8 Prudence and efficiency of QUU's 2012/13 employee expenses

QUU has taken efficiency measures to improve its labour productivity. Many of these flow from the Third Horizons report commissioned by the QUU Board and are commendable initiatives.

In the short term QUU has the task of replacing Brisbane City Council services, paid for under contract (service agreement), with its own people or outsourcing arrangements. This has created a large volume of one-off tasks which QUU has responded to by engaging temporary staff and contractors. This is a major change and is to be completed over a short time period. The approach has undergone several iterations and has had to be limited in scope because of time restrictions. Whilst QUU appears to be making commendable progress now, it has incurred additional expense because of changes in approach and the need to re-scope the projects involved.

QUU has the task of introducing uniform work practices and pay across its area of operations. This also has created the need for new systems and processes and the engagement of temporary staff/contractors to cope with the transition. As a result, there is a significant one-off cost impacting the 2012/13 year.

Salary rates are increasing (4.25 percent) in 2012/13 at a greater rate than the general movement in prices measured by the CPI. This is compounded by increment increases. Escalation rates are discussed separately in **Section 5.2.6.4**, however, it is noted that the wage escalation rates for 2012/13 reflect the high demand for skilled labour at the time the EBA was negotiated.

If QUU is to be sustainable within a CPI related prices cap, any future salary movements in excess of the CPI will need to be offset by on-going productivity improvements.

The forward estimates for employee expenses for 2013/14 and 2014/15 show further increases. They do not appear to reflect the sharp fall-off in expenditure that could be expected with the completion of the current transition projects and introduction of new systems.

Halcrow has assessed that the regulated activities undertaken by QUU's employees meet the QCA prudence test. Halcrow has concerns, however, with the efficiency of QUU's employee expenses. In particular:

- having high labour costs relative to its peers, particularly for water services; more specifically:
 - further analysis of the information presented in **Section 5.5** indicates that QUU's unit operating costs for the provision of water services are almost 50 percent greater than the weighted average of its interstate peers, and more than 20 percent greater in respect of total (water and wastewater) service provision; and
 - whilst total unit labour costs appear to be similar when compared to Unitywater, QUU's networks are less asset intensive per service unit (as noted in **Section 5.3.2.3**) and would be expected to attract lower unit operating costs. Halcrow also notes that it has recommended a downward adjustment in respect of Unitywater's employee costs.¹¹⁵

Given that employee expenses comprise some 36.5 percent of QUU's total operating costs (excluding bulk water), some further efficiencies in terms of unit employee costs would be expected on the basis of these comparisons.

- incurring excessive additional labour costs on its shift of emphasis from a reactive to a proactive maintenance program; and
- engaging a greater number of employees than otherwise would be required to meet the expedited separation program stemming from a change in timing and project scope.

On the basis of the discussion outlined above, it appears that an efficient level of employee expenses would lie between 5-10 percent lower than forecast in 2012/13. This view is incorporated in Halcrow's overall assessment of the aggregate level of inefficiency presented in **Section 5.7**.

5.3.3 Electricity Costs

5.3.3.1 Introduction

As shown in **Table 5.35**, electricity operating expenses are estimated to be \$11.1 million in 2012/13. This is an increase of 5.5 percent over 2011/12 and represents 4.2 percent of total regulated operating expenses excluding the cost of bulk water.

If greenpower expenses of around \$0.8 million are excluded from the 2011/12 expenditure, the percentage increase of 2012/13 over 2011/12 is approximately 13.7 percent.¹¹⁶

¹¹⁵ Halcrow, *SEQ Water and Wastewater Price Monitoring 2012-13; Unitywater; Assessment of Operating and Capital Expenditure - Review Report (Version 2.1)*; January 2013, page 94.

¹¹⁶ QUU email dated 12 October 2012. Folder titled 'Operating expenditure analysis', spreadsheet titled 'QCA 12-13 Budget and 11-12 actual with QCA definitions'. The spreadsheet shows actual electricity costs in 2011/12 of \$10,437,761 which includes greenpower of \$750,981.

Table 5.35:¹¹⁷ QUU Electricity Costs – Summary Assessment

	2010/11	2011/12	2012/13	2013/14	2014/15
Total Electricity Costs (\$'000 nominal)	11,595.9	10,568.4	11,147.9	11,882.9	13,317.7
Proportion of Total Regulated Operating Expenditure (excluding Bulk Water)	5.5%	4.4%	4.2%	4.5%	4.7%
Year-on-Year Percentage Change	-	-8.9%	5.5%	6.6%	12.1%

The following analysis is undertaken on the basis of information presented in QUU’s Interim Price Monitoring Information Return. Since this analysis was undertaken, QUU has provided additional explanations¹¹⁸ highlighting shortcomings in the cost allocation process in place at the time of preparing the budgets.

QUU has advised that:

- Excluding the effects of the carbon tax, electricity charges decrease by 8.5 percent in 2012/12. The QCA has reworked this figure based on the latest electricity determination (not available to QUU at the time of preparing its forecasts) and suggests 9 percent is a more likely outcome.¹¹⁹ The carbon tax more than offsets this reduction and adds approximately 10 percent (or \$1.3 million) to the overall cost of electricity.^{120,121}
- Energy efficiency savings of around \$0.4 million are expected in 2012/13.¹²²

5.3.3.2 Basis of QUU forecasts

In its Interim Price Monitoring Information Return,¹²³ QUU outlined the process adopted to forecast its annual electricity expenditure, as follows:

“Queensland Urban Utilities purchases electricity under two contracts one for large contestable sites the other for small contestable sites. Large contestable sites generally are sites that use electricity above 100MWh per annum.

The Eastern Region electricity budget for large contestable sites was based on the contract decrease of approximately 11.9%. This decrease does not include increases due to the carbon price, the revised contract prices are currently being negotiated between Queensland Urban Utilities and its electricity service provider.

¹¹⁷ Derived from QUU’s Submission to QCA, Table 5.11.1, dated 31 August 2012.

¹¹⁸ QUU email dated 18 October 2012.

¹¹⁹ QCA Email dated 8 October 2012.

¹²⁰ QUU submission to QCA, p55, 31 August 2012.

¹²¹ QUU’s electricity models refer to green energy cost (purchase of RECs); Halcrow understands that, whilst labelling has not been revised, these allowances now represent the cost impacts of the carbon tax.

¹²² QUU supplementary return received 5 October 2012.

¹²³ QUU Submission to QCA, dated August 2012, page 55.

For the small contestable sites, Queensland Urban Utilities has used the SKM.MMA electricity forecasts generated for the Water Services Association of Australia (WSAA). This indicated that there would be an increase in the electricity price for 2012/13 of 26.8%, however under the current small contestable contract a discount of 19% is applied, resulting in a net increase of 7.8%. The contracts in relation to the small contestable electricity are also currently being negotiated with the electricity service provider.

A composite electricity index for 2012/13 was calculated using a weighted average based on usage. The large contestable electricity comprises 82.8% of the total electricity use, with the small contestable comprising the remaining 17.2%. Therefore the weighted average electricity price movement for Queensland Urban Utilities in 2012/13 is a decrease of 8.51%.

As outlined above, the impact of the carbon price on the electricity prices faced by Queensland Urban Utilities in 2012/13 is yet to be determined, as such, Queensland Urban Utilities has provided an allowance in its forecast of electricity costs to account for this. This provision is about 10% of the overall cost of electricity and represents an increase similar to that expected by Commonwealth Treasury. This provision is not incorporated in the price decrease outlined above.

For 2013/14 and 2014/15 the forecast electricity index was taken from the WSAA report.”

During interviews with QUU representatives, spreadsheet modelling used to derive its electricity forecasts was demonstrated; a copy of the models was provided for further review. Halcrow is satisfied that, in principle, the approach adopted provides a reasonable basis for forecasting forward electricity expenditure. The assumptions underlying the forecasts, however, require consideration.

In simple terms, two factors influence movements in the cost of electricity; the unit cost of electricity supply and the net change in the amount of electricity required to operate the systems.

In respect of the growth in electricity usage, Halcrow understands that QUU has based its 2012/13 forecast on the growth in the number of connections whereas it has previously used the percentage growth in bulk water volumes.¹²⁴ Halcrow has considered the validity of this change as outlined in the following:

- Considering electricity from an overall perspective, it is typically be used by a water company in respect of:
 - pumping water;
 - water treatment (which in this case is undertaken by another entity); and
 - operation of wastewater treatment facilities, which involves the operation of equipment such pumps and aerators.
- In each case, electricity use is therefore related most directly to the volume of water pumped or the volume of sewage treated.

¹²⁴ QCA email to Halcrow dated 20 November 2012 (which references QUU source information).

- The number of connections could be used as a surrogate for population, which in turn drives water demand (specifically in relation to residential demand). The actual volume of water supplied, however, provides a more direct link to the volume of water pumped and therefore the associated energy use.
- Forecasting growth in electricity use on the basis of the increase property numbers will not reflect the adopted increase in per capita water demand, which would more accurately reflect the actual growth in electricity use. Table 6.2 in QUU's Interim Price Monitoring Information Return¹²⁵ shows the forecast growth in property numbers (residential and non-residential growth is assumed to be the same in each region), whilst growth in per capita demand is shown in Table 6.3.¹²⁶ A nominal 5 litres per person per day increase in residential demand (which equates to an increase of approximately 2.9 percent for Brisbane City) and a 0.5 percent increase in non-residential demand have been proposed.
- It is acknowledged that actual increase in pumping will be dependent upon where in the system additional demand is realised, however, the number of connections provides no clearer assessment than consideration of the volume of water supplied.
- Sewage volumes are typically related to water use for planning purposes, eg. sewerage system modelling uses water demand figures as an input when determining sewage flows. Whilst population (which may be related to the number of connections) is an important driver of the volume of sewage generated, the volume of water supplied provides a more direct link (albeit with factors applied to achieve calibration against actual flow monitoring).
- Notwithstanding the above comment, it is noted that the increase in per capita demand for water arises as a rebound phenomenon following the period of drought/restrictions. It would certainly be reasonable to assume that such growth in water demand will not result in an equivalent growth in sewage flows; a proportion (possibly the majority) of the additional could be expected to be used for non-sewage generating purposes such as garden watering or car washing. On this basis, growth in property numbers (as a surrogate for population growth) may be a more realistic basis for estimating the increase in sewage flows.
- QUU's electricity forecast model shows growth of 2 percent flat for both water and wastewater. This does not reflect the actual growth in property numbers or water demand. Taking the regional property growth allowances shown in Table 6.2 and applying these to the property numbers shown in Figure A.7,¹²⁷ the weighted average property growth amounts to 1.7 percent. If the increases in per capita water demand shown in Table 6.3 (weighted average 3 percent) are then factored in, the overall weighed average increase amounts to 4.7 percent (note this ignores the impact of the increase in non-residential water demand).

¹²⁵ QUU, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page 20.

¹²⁶ QUU, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page 21.

¹²⁷ QUU, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page viii.

On the basis of the discussion outlined above, Halcrow is of the view is that:

- Growth in electricity usage for water activities should be based on the growth in bulk water volumes. On the basis of the figures provided by QUU (property growth and per capita residential water demand increases), an aggregate growth of 4.7 percent would be appropriate; and
- Growth in electricity usage for wastewater activities should be based on the growth in property numbers. On the basis of the figures provided by QUU (property growth), an aggregate growth of 1.7 percent would be appropriate.

Adjustment to reflect these revised growth assumptions would result in a net increase of approximately \$69,000 in electricity expenses for 2012/13.

As noted in Section 5.3.2.1, the QCA has reworked the net change in the unit cost of electricity applicable to non-contestable sites based on the latest electricity determination (not available to QUU at the time of preparing its forecasts) and suggests a 9 percent reduction is a more likely outcome than the 8.5 percent reduction assumed by QUU. Adjustment of the total electricity forecast for 2012/13 on this basis would lead to a reduction in the order of \$55,000.

5.3.3.3 Electricity Cost by Service

Table 5.36 shows a breakdown of electricity expenses by service, whilst Table 5.37 shows year-on-year movement in each case.

Table 5.36: QUU Electricity Costs (\$'000 nominal)

Service	2010/11	2011/12	2012/13	2013/14	2014/15
Water	1,499.3	1,138.9	1,658.5	1,775.8	1,998.6
Wastewater	8,571.4	8,042.1	8,066.6	8,594.2	9,627.3
Trade Waste	1,525.2	1,387.4	1,422.7	1,512.9	1,691.7
Total Electricity Costs	11,595.9	10,568.4	11,147.8	11,882.9	13,317.6

Table 5.37: QUU Electricity Costs – Year-on-Year Percentage Change (based on \$nominal)

Service	2010/11	2011/12	2012/13	2013/14	2014/15
Water	-	-24.0%	45.6%	7.1%	12.5%
Wastewater	-	-6.2%	0.3%	6.5%	12.0%
Trade Waste	-	-9.0%	2.5%	6.3%	11.8%
Total Electricity Costs	-	-8.9%	5.5%	6.6%	12.1%

The cost of providing electricity to wastewater and trade waste services comprises 85.1 percent of the total electricity expense in 2012/13. The cost of providing electricity to water services increases by 45.6 percent in 2012/13 and is the major contributor to the overall increase in electricity expenses.

5.3.3.4 Unit Costs (Electricity Expenses) of Service Provision

Table 5.38 shows the change in electricity expenses incurred in providing drinking water by unit volume (kilolitre) and similarly the change in the electricity expenses incurred in providing wastewater services per property.

Electricity expenses (per unit of water purchased by QUU) incurred in providing water services increases by 40.8 percent in 2012/13. This highlights the fact that the overall increase of 45.6 percent in electricity costs for water services is a combination of increased electricity prices and electricity volumes (associated with higher assumed water consumption per customer and an increase in the number of customers).

Wastewater related electricity expenses reduce by 1.3 percent per property, which is reflective of the operational efficiency gains identified in Section 5.3.3.6 (refer Table 5.42).

Table 5.38: Analysis of Expenditure Variances – Electricity Costs by Service

Service	2010/11	2011/12	2012/13	2013/14	2014/15
Water Electricity Cost (\$'000s)	1,499.3	1,138.9	1,658.5	1,775.8	1,998.6
ML purchases	120313.7	126455.8	130834	134887.2	139089.4
\$/kL	0.0125	0.0090	0.0127	0.0132	0.0144
% change	-23.5%	-27.7%	40.8%	3.9%	9.2%
Wastewater Electricity Cost (\$'000s)	8,571.4	8,042.1	8,066.6	8,594.2	9,627.3
Properties Served	484663	492741	500650	508724	516968
\$/property	17.69	16.32	16.11	16.89	18.62
% change	10.2%	-7.7%	-1.3%	4.8%	10.2%

Source Worksheet 5.4.1; Interim Price Monitoring Information Return 2012/13 – Data Template

5.3.3.5 Electricity Expense by Region

The overall movements in electricity costs mask significant movements in expenses incurred in individual regions, as illustrated in Table 5.39 (which shows actual cost distribution) and Table 5.40 (which shows year-on-year variations by region and service). This is particularly the case between the Brisbane and Ipswich regions.

Table 5.39: Electricity Costs by Region (\$'000 nominal)

Region	Service	2010/11	2011/12	2012/13	2013/14	2014/15
Brisbane	Water	1,066.5	1,051.9	1,040.1	1,103.0	1,230.1
	Wastewater	7,103.9	6,155.3	6,629.3	7,030.2	7,840.0
	Trade Waste	1,366.0	1,183.6	1,274.8	1,351.9	1,507.6
	<i>Total</i>	<i>9,536.4</i>	<i>8,390.8</i>	<i>8,944.2</i>	<i>9,485.1</i>	<i>10,577.7</i>
Ipswich	Water	318.3	87.0	416.0	452.8	517.6
	Wastewater	1,242.6	1,590.8	1,154.9	1,257.1	1,437.1
	Trade Waste	159.2	203.8	147.9	161.0	184.1
	<i>Total</i>	<i>1,720.1</i>	<i>1,881.6</i>	<i>1,718.9</i>	<i>1,871.0</i>	<i>2,138.9</i>
Lockyer Valley	Water	45.7	0.0	79.0	85.5	97.2
	Wastewater	104.6	151.2	118.0	127.7	145.3
	Trade Waste	-	-	-	-	-
	<i>Total</i>	<i>150.3</i>	<i>151.2</i>	<i>197.0</i>	<i>213.2</i>	<i>242.5</i>
Scenic Rim	Water	26.3	0.0	70.0	76.5	87.7
	Wastewater	83.5	71.7	105.2	114.9	131.7
	Trade Waste	-	-	-	-	-
	<i>Total</i>	<i>109.8</i>	<i>71.7</i>	<i>175.2</i>	<i>191.4</i>	<i>219.4</i>
Somerset	Water	42.5	0.0	53.4	58.0	66.0
	Wastewater	36.8	73.2	59.2	64.3	73.2
	Trade Waste	-	-	-	-	-
	<i>Total</i>	<i>79.3</i>	<i>73.2</i>	<i>112.6</i>	<i>122.2</i>	<i>139.2</i>
Total	Water	1,499.3	1,138.9	1,658.5	1,775.8	1,998.6
	Wastewater	8,571.4	8,042.1	8,066.6	8,594.2	9,627.3
	Trade Waste	1,525.2	1,387.4	1,422.7	1,512.9	1,691.7
Total		11,595.9	10,568.4	11,147.9	11,882.9	13,317.7

While the cost of electricity for water services in the Brisbane region remains relatively static in 2012/13, it increases significantly for Ipswich. This is the opposite of what occurs for wastewater services; the electricity component of Brisbane's wastewater expenses increases by 7.7 percent (\$0.474 million) while Ipswich's reduces by 27.4 percent (\$0.436 million).

Table 5.40: Electricity Costs by Region – Year-on-Year Percentage Change (based on \$nominal)

Region	Service	2010/11	2011/12	2012/13	2013/14	2014/15
Brisbane	Water	-	-1.4%	-1.1%	6.0%	11.5%
	Wastewater	-	-13.4%	7.7%	6.0%	11.5%
	Trade Waste	-	-13.4%	7.7%	6.0%	11.5%
	<i>Total</i>	-	-12.0%	6.6%	6.0%	11.5%
Ipswich	Water	-	-72.7%	378.2%	8.8%	14.3%
	Wastewater	-	28.0%	-27.4%	8.8%	14.3%
	Trade Waste	-	28.0%	-27.4%	8.8%	14.3%
	<i>Total</i>	-	9.4%	-8.6%	8.8%	14.3%
Lockyer Valley	Water	-	-100.0%	-	8.2%	13.7%
	Wastewater	-	44.5%	-22.0%	8.2%	13.7%
	Trade Waste	-	-	-	-	-
	<i>Total</i>	-	0.6%	30.3%	8.2%	13.7%
Scenic Rim	Water	-	-100.0%	-	9.2%	14.6%
	Wastewater	-	-14.2%	46.8%	9.2%	14.6%
	Trade Waste	-	-	-	-	-
	<i>Total</i>	-	-34.7%	144.4%	9.2%	14.6%
Somerset	Water	-	-100.0%	-	8.5%	13.9%
	Wastewater	-	98.9%	-19.1%	8.5%	13.9%
	Trade Waste	-	-	-	-	-
	<i>Total</i>	-	-7.7%	53.9%	8.5%	13.9%
Total	Water	-	-24.0%	45.6%	7.1%	12.6%
	Wastewater	-	-6.2%	0.3%	6.5%	12.0%
	Trade Waste	-	-9.0%	2.5%	6.3%	11.8%
Total		-	-8.9%	5.5%	6.6%	12.1%

QUU has explained that these variances are a result of the allocation process adopted for budgeting purposes, which is still subject to ongoing refinement:¹²⁸

“The issue with the significant change in the electricity expense for water services is the allocation of costs in the western region (outside of Brisbane). The forecast actual information used in completing the QCA template is not reflective of the actual electricity use for QUU. The process of forecasting electricity costs for this region is still being enhanced – while there is a structured process, there are still improvements to be made, primarily in relation to the allocation of costs within products and regions throughout the actual year. The overall amount that was provided in the QCA template for this region based on the forecast actuals was correct, however the allocation between products and regions was not

¹²⁸ QUU email dated 18 October 2012.

reflective of actual activity (this can be seen by some regions having “0” electricity for the year for water services).

During the financial year, staff involved in this process were concentrating on getting the overall accruals correct rather than the products and districts underneath. The allocation has been updated with the final actual numbers and provides a more accurate reflection of what actually happened in relation to electricity costs for the different products and districts – a table of the actual information is provided below (note that the electricity costs from the QCA template will differ due to these numbers being the finalised actuals).

The subsequent allocation to Trade Waste services (out of the Wastewater service) is done through the use of the Sewerage Costing Model (previously provided to the QCA as Supporting Information).

FY 2011-12 Actual				
	Ipswich	Lockyer	Scenic Rim	Somerset
Water	434	45	52	63
Wastewater	1348	84	95	41
Total	1782	129	147	104

The reasons for the difference in Brisbane’s electricity cost in the budget for 2012/13 relate to the following:

- QUU signed new electricity supply contracts which came into effect in July 2011;
- From 1 January 2012, QUU ceased purchasing green power – thereby reducing its electricity bill – while the introduction of the carbon price from July 2012 has subsequently increased the electricity costs;
- For the 2012/13 electricity budget it was assumed that Oxley Creek would return to normal energy consumption (Oxley Creek was not operational for 2011/12) – this has a material impact on the wastewater electricity expenses.

The changes in the Ipswich electricity costs relate to the issues outlined above.”

5.3.3.6 Opportunities for electricity savings

As previously reported (refer **Section 5.2.6.5**) QUU engaged consultants, Third Horizons, to undertake an efficiency study of QUU’s activities. In a report to the QUU Board dated October 2011, Third Horizons states:¹²⁹

“There is opportunity for increased pro-active energy management and implementation of energy efficiency initiatives within treatment plants. We have identified indicative savings of over \$800,000 per annum and believe the total opportunity from energy efficiency measures is in excess of \$1 million per annum. Greater monitoring and control systems would be required.”

¹²⁹ Third Horizons Consulting Partners, *Queensland Urban Utilities; Cost Efficiency Review; Phase 2 – Board Presentation*, 18 July 2011.

Third Horizons nominate an initial outlay of from \$0.5 million to over \$1 million to achieve these savings.

Third Horizons have also made the observations and proposed the actions documented in Table 5.41.¹³⁰

Table 5.41: Third Horizon Proposed Efficiency Improvement Actions (Treatment Operations)

Observation	Implication	Proposed Action
<ul style="list-style-type: none"> ▪ The current Cambi and Eastern Plants Biosolids and cogeneration model is running at 37% efficiency. ▪ Luggage Point is operating efficiently, but there would be cost savings through a capital upgrade. ▪ There is no Biosolids strategy for the Ipswich plants. 	<ul style="list-style-type: none"> ▪ If the current Cambi model was optimised and ran effectively, there would be net savings of \$1.3m pa. ▪ An upgrade to Luggage Point would deliver net savings of \$1.1m pa, and an upgrade to Ipswich plants would deliver net savings of \$0.3m pa. 	<ul style="list-style-type: none"> ▪ Additional resource to manage and optimise current Cambi model. ▪ Assess technology upgrade options at Luggage Point. ▪ Develop a Biosolids strategy for the Ipswich plants.
<ul style="list-style-type: none"> ▪ There is currently little proactive energy management and no implementation of any energy efficiency initiatives within treatment plants. ▪ Plants and operators do not have adequate controls to optimise operations to reduce energy use. 	<ul style="list-style-type: none"> ▪ There is significant scope to reduce energy costs. Analysis shows that optimising the aeration process may deliver savings of \$0.7m pa, and reducing demand peaks at LP and Oxley would save \$0.1m pa. ▪ There are other energy initiatives not analysed within this report. Potential savings could be \$1m+ pa. 	<ul style="list-style-type: none"> ▪ Implement smart-metering to give operators real-time visibility of energy usage to manage demand. ▪ Conduct a fully energy audit on top 5 Treatment sites. ▪ Upgrade monitoring and control technology to enable automatic system optimisation, or operators to manage processes more effectively thereby reducing costs.

QUU has provided the following information in response to recommendations presented in the Third Horizons report:^{131,132}

“As outlined in previously – this is not necessarily just electricity efficiency gains. The following provides an overview of the actions currently being taken by Queensland Urban Utilities to achieve these identified efficiencies. The responses for points (iii) and (iv) have been combined at the end of this section as the actions being undertaken by Queensland Urban Utilities are the same for these identified efficiencies.

- I. *CAMBI and the digesters were damaged during the 2011 floods and have not been operational since. It is anticipated that the efficiency savings will commence during 2013 – subject to CAMBI being fully operational.*
- II. *Queensland Urban Utilities is currently finalising its Biosolids Strategy which was one of the recommended actions from the Third Horizons review. The Biosolids Strategy has three aims – 1) reduction in volume of biosolids; 2) increase electricity generation; and 3) reduction in greenhouse/carbon footprint. The strategy document sets out the approach to achieve these aims over the short, medium and long-term. The Biosolids Strategy has been developed internally but is*

¹³⁰ Ibid.

¹³¹ QUU email to QCA, dated 7 October 2011

¹³² QUU email dated 19 October 2012.

yet to be approved by the Board as being the adopted approach. The benefits of implementing the strategy to achieve these identified efficiencies will not be realised in the short-term.

III. *The budget has been reduced by \$400,000 in relation to energy costs (outlined in detail in other response) – these relate to quite specific short-term measures for the business to implement.*

Co-generation at Oxley Creek and Luggage Point are currently being investigated, however the savings will not be realised until after the 2012/13 financial year.

Smart metering has been completed at 28 of Queensland Urban Utilities' largest sites involving sewerage treatment plants and water and sewage pumping stations – energy consumption at these sites is also being monitored.

Energy audits have also been conducted at treatment sites to understand the energy usage for each site and be able to implement approaches to optimise the use of these sites going forward. The impact of these changes will take time to be able to be realised.

Therefore in addition to the immediate efficiency gains of \$400,000 in electricity costs, Queensland Urban Utilities are currently implementing actions that will drive further efficiencies that will be realised in the longer term – post 2012/13.”

QUU has also provided the explanations shown in Table 5.42 for the derivation of the \$0.4 million efficiency savings in electricity use in 2012/13. These savings have been incorporated into QUU's forecast modelling.

Table 5.42: Energy Efficiency Savings

Site	Estimated Savings	Measures that Will Contribute
Luggage Point STP	\$202,771	Maintain Diffusers, Optimise RO Plant (at Luggage Point), Reduce Head Loss (at Eagle Farm), Optimise Centrifuge Operations, Reduce Peak Demands, Optimise RAS Pumping, Revise Blower Controls, Adjust Aeration System Valve
Oxley Creek STP	\$37,020	
Gibson Island STP	\$39,618	
Eagle Farm STP	\$76,381	
Bundamba STP	\$48,210	
Sandgate STP		
Total	\$404,000	

5.3.3.7 Additional actions taken by QUU to reduce electricity expenses

In addition to the actions taken in response to the Third Horizons recommendations, QUU has also taken the following actions to reduce electricity expenses:¹³³

- Sought competitive tenders from the market for electricity supply.
- Engaged an energy consulting firm to:
 - verify its monthly accounts for accuracy in billing to ensure:
 - there are no overlaps between bills;
 - the correct electricity charges are applied; and
 - there are no unexplained variations in electricity demand;

¹³³ Discussions with QUU on 3 October 2012

- identify demand spikes and opportunities for improved load management;
- Engaged a specialist firm in 2011/12 to develop an energy action plan to achieve 3.5 percent energy savings;
- Reduced peak demand by pumping drinking water to reservoirs at night (off peak); and
- Constructed co-generation plants at its two main sewage treatment plants (Luggage Point and Oxley). Unfortunately the Oxley plant was damaged in the 2011 floods and is not expected to resume electricity generation in 2012/13.

5.3.3.8 Prudence and efficiency of QUU's 2012/13 electricity expenses

QUU has adopted a thorough approach to its estimation of electricity costs and the identification of potential efficiency gains.

It has adopted efficiency initiatives to reduce electricity costs; some of these flow from the Third Horizons' efficiency review. Additional efficiency improvements identified by Third Horizons are being implemented and others are under investigation. Those initiatives for which allowances have been incorporated into QUU's forecasts relate principally to operational improvements at a number of its sewerage treatment facilities.

QUU's current costs are higher than normal because of the flood damage suffered by Oxley STP. The plant's co-generation facility is expected to be out of operation for all of 2012/13. The impact (in dollar terms) has not been identified and it is not apparent as to whether this has been incorporated into QUU's forecasts.

Whilst Halcrow is satisfied that QUU's approach to forecasting electricity costs is robust in principle, two of the key assumptions underlying the forecasts have required further consideration:

QUU has based its 2012/13 forecast on the growth in the number of connections whereas it has previously used the percentage growth in bulk water volumes. Halcrow is of the view that whilst this driver is more appropriate for electricity use associated with the sewerage system, growth in bulk water volumes is a more appropriate driver for electricity use associated with the delivery of water services. A change of this driver would result in an increase in the order of \$69,000.

QUU has based its increase in the unit cost of electricity on the provisions of its contestable site contracts and, for the small contestable sites, on forecast cost increases presented a Water Services Association of Australia (WSAA) commissioned report. The adopted forecast movements led to a weighted average price reduction of 8.5 percent for QUU. The QCA has undertaken an alternative assessment of the net change in the unit cost of electricity applicable to non-contestable sites based on the latest electricity determination and suggests a 9 percent reduction is a more likely outcome than the 8.5 percent reduction assumed by QUU. Adjustment of the total electricity forecast for 2012/13 on this basis would lead to a reduction in the order of \$55,000.

Given the minimal net adjustment (an increase of approximately \$14,000), Halcrow does not consider an adjustment to the aggregate forecast appropriate. Accordingly, QUU's forecast electricity costs for 2012/13 are considered to be both prudent and efficient.

Halcrow notes, however, that there is further scope for the implementation of energy efficiencies. Third Horizons has identified potential savings in the order of \$800,000 per annum and believes there is opportunity to increase this to more than \$1 million per annum; only \$400,000 has been incorporated into the 2012/13 forecast.

Furthermore, QUU has acknowledged that improvements are required to the system for allocating costs to enable improved product and regional costing. This should lead to a better understanding of electricity use and the potential to identify further savings.

5.3.4 Corporate Costs

5.3.4.1 Introduction

QUU has provided a listing of its Corporate Costs for 2012/13. This is summarised in Table 5.43:¹³⁴

Table 5.43: QUU Corporate Costs 2012/13 (\$'000 nominal)

	Employee	Contractors	Licence & Regulatory	Other Material & Services	Total
Office of CEO	4,434.6	61.7		7,792.7	12,289.0
People & Safety	5,379.3	- 120.0		3,494.7	8,754.0
Finance, Risk & Procurement	9,567.8	240.0	677.2	5,663.2	16,148.2
Information Services	- 3,878.1	8,642.7		21,313.5	26,078.1
Strategy & Growth	562.9			27.8	590.7
Operations	528.7	50.0		736.8	1,315.5
Retail	1,341.2			1,910.9	3,252.1
Total	17,936.4	8,874.4	677.2	40,939.6	68,427.6

Note: It is assumed (pending confirmation) that amounts shown as credits are amounts capitalised.

The total Corporate Costs shown in Table 5.43 amount to 25.7 percent of total operating expenses (excluding bulk water costs) or 12.8 percent of total operating expenses if the cost of bulk water is included.

The figures for 2012/13 are inflated by the number of temporary positions (supplied under contract arrangements) created as part of the ICT separation program.

¹³⁴ QUU spreadsheet *QCA 12-13 (Budget) and 11-12 (Actual) Total Costs with QCA definitions.xlsx* included in information pack supplied 12 October 2012.

A recommendation in the QCA's 2011/12 Interim Price Monitoring Report¹³⁵ was "that QUU prioritise putting in place appropriate systems to capture corporate cost information that is fully compliant with the Authority's definition for future price submissions". QUU has not complied with this recommendation and advises:¹³⁶

"As in 2011/12 Price Monitoring submission corporate costs have been collated separately. In total these costs closely align with the QCA definition of Corporate Costs with the following exceptions:

- *It excludes environmental management costs (as these are held within an operations responsibility code); and*
- *It includes accounts receivables for sundry charges (as these are held within a finance responsibility code)."*

5.3.4.2 Variation from 2011/12

The total Corporate Cost figure shown for 2011/12 in the QCA's 2011/12 Interim Price Monitoring Report was \$52 million or 21.9 percent of total operating expense excluding bulk water. QUU has now indicated that this figure was underreported¹³⁷ and that, with the addition of "*approximately \$6 million of expense from the ICT program*", the corrected figure is \$58.2 million.

Halcrow notes that the increase in Corporate Cost from 2010/11 to 2011/12 was justified (as reported in the QCA's 2011/12 Interim Price Monitoring Report)¹³⁸ in part by expenditure of \$6 million in respect of the ICT investment program. Furthermore, QUU's 2012/13 Interim Price Monitoring Information Return¹³⁹ indicates that the budgeted expenditure for the ICT Investment Program in 2011/12 was \$6.0 million. The consistency of these figures with the amount by which 2011/12 Corporate Costs are now claimed to have been underreported raises a question as to whether the amount may be double counted.

QUU has explained the reported increase of 2012/13 over 2011/12 as:¹⁴⁰

"Of the \$10.2 million increase, \$9.4 million is due to the variance year on year in new initiatives, the significant increase in Corporate Cost initiatives is \$11.0 million for the ICT separation program."

Separate corporate cost figures have not been provided for years beyond 2012/13. It is expected that corporate costs will reduce upon completion of the ICT separation program, however, there is no evidence of a matching decline in overall operating expenditure post 2012/13.

Halcrow's assessment of QUU's 'new initiatives', including the ICT Separation Program, is presented in **Section 5.2.6.6**.

¹³⁵ QCA, *Final Report; SEQ Interim Price Monitoring for 2011-12; Part B - Detailed Assessment*, March 2012, page 101.

¹³⁶ QUU, *QCA Interim Price Monitoring; Information Return 2012/13*, 31 August 2012, page 57.

¹³⁷ Ibid.

¹³⁸ QCA, *Final Report; SEQ Interim Price Monitoring for 2011-12; Part B - Detailed Assessment*, March 2012, page 99.

¹³⁹ QUU, *QCA Interim Price Monitoring; Information Return 2012/13*, 31 August 2012, Table 7-4, page 30.

¹⁴⁰ QUU, *QCA Interim Price Monitoring; Information Return 2012/13*, 31 August 2012, page 57.

5.3.4.3 Corporate employee costs and staff numbers

QUU has provided a break up of its labour costs, an extract of which is reflected in Table 5.44. This shows the number of employees (and associated labour costs) engaged in support services for 2011/12 and 2012/13.¹⁴¹

Table 5.44: Budgeted Employee Costs and FTE Numbers

	Budget 2011/12			Budget 2012/13		
	\$'000	FTE's	Average	\$'000	FTE's	Average
Office of the CEO	2,439.8	14.7	165,973			
Workforce Capability	3,563.5	32.5	109,647			
Corporate Services	9,937.3	121.8	81,587			
Finance	7,339.3	41.3	177,707			
ICT	9,927.7	34.0	291,991			
Sub Total Corporate 2011/12	33,207.6	244.3	135,930	-	-	-
Office of the CEO				4,765.0	36.6	130,121
People & Safety				5,259.3	57.3	91,817
Finance, Risk & Procurement				9,807.8	80.1	122,445
Strategy & Growth				562.9	3.0	187,635
Information Services (inc. Sep)				15,056.8	97.0	155,224
Sub Total Corporate 2012/13	-	-	-	35,451.8	274.0	129,386

Source QUU Spreadsheet (QCA Comparison of employee costs.xlsx) dated 12 October 2012.

Notes:

1. Functional realignments of Corporate Services were completed during and at the end of 2011/12 resulting in significant movements of roles within cost centres from 11/12 to 12/13. This included 30.9 FTE's moving into Operations.
2. Employee costs includes accounts such as Normal Time, Overtime, Sick Leave, Annual Leave, Super, Payroll Tax, Workcover premiums etc.
3. Gross Employee costs have been used in the comparisons and capital recovery included for reconciling purposes.
4. Information Services includes 39 temporary positions for Separation project.
5. Note the 11-12 dollar amounts are budget not forecast/actual that is in the QCA template.

There are variations between the figures shown in Table 5.44 and Table 5.43 for 2012/13 employee costs (combined with contractors). Inconsistencies in the basis of the figures compromise year-on-year comparisons and benchmarking. More specifically:

¹⁴¹ QUU spreadsheet *QCA Comparison of employee costs.xlsx* included in information pack supplied 12 October 2012.

- Categories of corporate expenditure vary from 2011/12 to 2012/13; accordingly, comparison can only be made at an aggregate level.
- QUU indicates (note 3 to **Table 5.44**) that the figures in **Table 5.44** are gross amounts and include capitalised expenditure. Whilst the total amount of employee costs capitalised in each year has been identified in the source document, the amount attributable to corporate (support) functions has not been identified.
- The transfer of 30.9 FTEs into Operations in 2012/13 would indicate that the effective increase in corporate labour costs is further inflated (assuming that the cost of the transferred FTEs, which would amount to approximately \$4.0 million (ie. 30.9 @ \$129,400), is excluded from the 2012/13 figures).

A comparison of corporate labour costs (employees and contractors) presented in **Table 5.43** (including 'add-back' of figures assumed to have been capitalised (see note to **Table 5.43**)) with those presented in **Table 5.44** suggests a discrepancy of some \$4.6 million (\$35.452 million less \$30.81 million).

Year-on-year comparison of the figures in **Table 5.44** indicates that if labour associated with ICT/Information Services is excluded, the total number of FTEs remains essentially consistent if allowance is made for the transfer to operations (net growth of 2.4 FTEs). This assessment is supported on a cost basis by taking into account the allowance assumed above for the cost of the transferred FTEs (ie. approximately \$4.0 million) and the adopted labour escalation rate. On this basis, it appears that the increase in corporate labour relates predominantly to the ICT separation program.

5.3.4.4 Drivers of corporate cost increases

The principal factor contributing to the increase in Corporate Costs is the separation from Brisbane City Council.¹⁴² This requires the development of standalone systems and the engagement of new staff (eg. call centre), which are required if QUU is to meet its legal obligations and ensure compliance with existing service standards. No changes in service standards are envisaged.

Other contributing factors are upgrades to existing corporate systems and changes to the organisational structure. The roll out of uniform systems to all operational areas is essential for improved management of operations.

An example of organisational change is the creation of a new section to oversight the reforms flowing from the Third Horizons efficiency review and other initiatives.

5.3.4.5 Benchmarking

Comparisons of the corporate costs incurred by different organisations are compromised by how different organisations are structured and what is included in their corporate costs. For example, functions that are centralised in one organisation, such as procurement or stores, may be decentralised in another.

¹⁴² QUU, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page 57.

This can be overcome by using common definitions of corporate costs and/or undertaking a detailed functional analysis. In recognition of this, the QCA in the SunWater irrigation price review opted for the latter.¹⁴³

In the absence of such a study for QUU, the following analysis is performed at an aggregate level of corporate costs with the above caveats.

The QCA notes¹⁴⁴ that in its 2010/11 Interim Price Monitoring Submission, Unitywater relied upon a NSW Government paper in support of its level of corporate costs:

“Advice on corporate overheads was sourced from the Council on the Cost and Quality of Government (CCQG), now known as the Performance Improvement Branch, Department of the Premier and Cabinet, New South Wales government. For agencies of greater than 350 full time equivalent employees CCQC have benchmarked corporate overheads at between 10 and 12% of overall operating costs.”

At 12.8 percent of total operating expenditure (including bulk water), QUU’s corporate costs are marginally higher than the range of 10-12 percent. However, this should be discounted in the context of the CCQC report because of the inclusion of bulk water costs. Corporate costs comprise 25.7 percent of operating expenditure if bulk water costs are excluded.

The consultant engaged by the Independent Pricing and Regulatory Tribunal of NSW (IPART) to review Sydney Water Corporation’s expenditure for the purpose of determining maximum charges for 2012-2016 concluded:¹⁴⁵

“The level of Corporate costs to operational and maintenance costs appears marginally high when compared to a Frontier Company. We consider there are opportunities for further efficiencies.”

Table 5.45 shows QUU’s and Sydney Water’s¹⁴⁶ corporate costs for 2012/13 and compares the level to total operating expenditure excluding bulk water and, in the case of Sydney Water, desalinated water.

¹⁴³ Deloitte, *Queensland Competition Authority; SunWater; Administration Cost Review Phase 2*, 25 August 2011, page 81; and QCA, *Final Report; SunWater Irrigation Price Review 2012-17; Volume 1*, May 2012, page 300.

¹⁴⁴ QCA, *Final Report; SEQ Interim Price Monitoring for 2011-12; Part B – Detailed Assessment*, March 2012, page 345.

¹⁴⁵ WS Atkins/Cardno, *Final Report; Detailed Review of Sydney Water Corporation’s Operating and Capital Expenditure*, November 2011, page 88.

¹⁴⁶ WS Atkins/Cardno, *Final Report; Detailed Review of Sydney Water Corporation’s Operating and Capital Expenditure*, November 2011, pages 85 and 93. \$43.5 million is deducted from Sydney Water’s corporate costs for 2012/13 for redundancies and finance lease payments for a water treatment plant and a tunnel.

Table 5.45: Corporate Costs compared to Total Operating Expenditure

QUU			Sydney Water		
Description	\$million	% of total opex	Description	\$million	% of total opex
Office of CEO	12.3	4.6	Managing Director	4.0	0.5
People & Safety	8.8	3.3	Human Resources	15.2	1.7
Finance, Risk & Procurement	16.1	6.0	Finance & Regulation	10.9	1.2
Information Services	26.1	9.8	Corporate Services	89.7	10.1
Strategy & Growth	0.6	0.2			
Operations	1.3	0.5			
Retail	3.2	1.2			
Total Corporate	68.4	25.7	Total Corporate	119.8	13.5
Total Operating Expenditure	266.5		Total Operating Expenditure	887.5	

Note: Total Operating Expenditure excludes the cost of Bulk Water and, in addition for Sydney Water, the cost of desalinated water. The costs of redundancies and finance lease payments are excluded from Sydney Water's Corporate Cost figures to make them more comparable to QUU's corporate cost figures.

The figure of 13.5 percent for Sydney Water is consistent with the comment (by WS Atkins/Cardno) that its corporate costs are marginally high when compared to the CCQG benchmark of 10-12 percent.

QUU contends¹⁴⁷ that the figures presented in Table 5.45 do not capture the full extent of Sydney Water's corporate costs and are therefore inconsistent with its reported figures; this has the effect of distorting the comparison. Halcrow is of the view that rather than adding additional elements to Sydney Water's corporate costs, it would be more appropriate to exclude some 'corporate costs' reported by QUU on the basis that they would be more appropriately directly allocated (eg. Operations administrative costs). If the costs reported in Table 5.43 are adjusted to include only Office of CEO, People & Safety, Finance, Risk & Procurement, and Information Services costs (reasonably considered to be Corporate Costs in the absence of further detail), the total of QUU's Corporate Costs still amount to \$63.27 million or 23.7 percent of Total Operating Expenditure (refer also to Table 5.45). If the one-off expenditure of \$10 million in respect of the ICT Separation Program is also excluded (as proposed by QUU), QUU's Corporate Costs still amount to \$53.27 million or 20 percent of Total Operating Expenditure.

QUU further indicates¹⁴⁸ that the corporate costs (\$68 million) identified in its Interim Price Monitoring Submission also include a proportion of costs that are capitalised¹⁴⁹

¹⁴⁷ QUU, *QUU Response to Revised Halcrow Report* (attachment to email dated 19 December 2012).

¹⁴⁸ Ibid.

¹⁴⁹ Halcrow notes that the information from which the corporate costs were sourced (spreadsheet *QCA 12-13 (Budget) and 11-12 (Actual) Total Costs with QCA definitions.xlsx*, which was provided as an attachment to an email dated 12 October 2012) shows that adjustments for the capital recovery of approximately \$11 million of Salaries and Wages expenditure have already been accounted; downward adjustments in respect of some other cost elements are also shown.

and a small portion that are allocated to non-regulated services. It is subsequently provided an estimate¹⁵⁰ indicating that when such costs are excluded, its forecast corporate costs amount to \$58.66 million (ie. 22 percent of Total Operating Expenditure).

Notwithstanding the presentation of QUU’s costs in comparison with those of Sydney Water, Halcrow’s assessment of the efficiency of QUU’s corporate costs is based on comparison with the CCQG benchmark of 10-12 percent.

Table 5.46 is included for consistency with the 2011/12 QCA review. It shows the ratio of corporate costs to employee numbers (FTEs), customer connections (water) and revenue. Such figures are affected by the relative reliance on contractors compared to internal staff, customer mix and the governance arrangements and price constraints existing in the different jurisdictions.

Table 5.46: Indicative Corporate Cost Ratios

Water Company	Indicator		
	\$/FTE	\$/customer connection	\$/revenue
QUU	52.9	123.8	69.9
Unitywater	38.6	122.1	66.6
Sydney Water	39.5	66.8	53.0
Victorian water retailer/distributor (1)	109.6	80.5	77.0
Victorian water retailer/distributor (2)	89.5	62.5	78.5
Victorian water retailer/distributor (3)	64.7	35.0	43.2

Note: Figures for Queensland Urban Utilities and Unitywater sourced from their respective Interim Price Monitoring Information Return/Submission; figures for Sydney Water sourced from the expenditure review consultant’s report;¹⁵¹ and figures for Victorian water companies escalated from figures presented in the QCA’s 2011/12 Interim Price Monitoring Report).¹⁵²

The key ratio in Table 5.46 is the ratio of corporate costs to customer numbers. This shows most clearly the impact of the level of corporate costs on customers’ bills. While the ratio for QUU is comparable with Unitywater, it is double the figure for most interstate comparators. Halcrow notes that the figures presented in respect of Sydney Water are much lower than shown in the QCA’s 2011/12 Interim Price Monitoring Report. They have been adjusted to exclude redundancy provisions and allowances for finance lease payments for a water treatment plant and tunnel; this has been done to enable more ‘like for like’ comparisons.

¹⁵⁰ QUU spreadsheet, *Corporate Costs v1.1.xlsm*, provided to the QCA on 9 January 2013.

¹⁵¹ WS Atkins/Cardno, *Final Report; Detailed Review of Sydney Water Corporation’s Operating and Capital Expenditure*, November 2011.

¹⁵² QCA, *Final Report; SEQ Interim Price Monitoring for 2011-12; Part B - Detailed Assessment*, March 2012, page 99.

5.3.4.6 Prudence and efficiency of QUU's 2012/13 Corporate Costs

QUU is a new organisation in the process of separating from Brisbane City Council, establishing a new management structure and applying uniform systems and procedures across its area of operation. It has taken the initiative of undertaking an external efficiency review.

QUU's corporate activities are essential for its sustainable operations and to meet its legal obligations. No activity was identified that was deemed unnecessary and imprudent. There are, however, questions over the efficiency of its corporate activity.

QUU's corporate costs can be classified as either 'business as usual' or one-off expenditures associated with the separation program.

Taking the 10-12 percent benchmark of the CCQG as a guide, the efficient level of corporate costs for business as usual activity is in the range of \$27 million to \$32 million. This leaves around \$36 million to \$41 million accounted for by one-off separation expenditures and/or inefficiencies.

QUU has nominated \$37.4 million¹⁵³ as 'new initiative' expenditure in 2012/13. However, much of this is not corporate expenditure (eg. planned maintenance and sewer condition testing) or not demonstrably business as usual expenditure (eg. IT investment program). By comparison, for example, a significant component of Sydney Water's corporate expenditure relates to new IT systems.¹⁵⁴

Problems were encountered by QUU in the development of new systems for the separation from Brisbane City Council. These included:

- Initial difficulties in defining the task and project scope;
- Subsequent change of scope; and
- Adoption of an expedited program because of previous delays and announcement by Brisbane City Council of an earlier than expected deadline for final separation.

It is also likely that greater costs were incurred on Brisbane City Council's legacy systems than could have been achieved in a competitive market. Some of these additional costs have carried forward to 2012/13.

These issues have resulted in additional expenditure in excess of an efficient level.

In contrast with QUU's 'new initiative' expenditure of \$57 million over the two years 2011/12 and 2012/13,¹⁵⁵ Unitywater has nominated an amount of \$15 million¹⁵⁶ as non-recurrent operating expenditure over the same period. This also points to excessive expenditure by QUU.

¹⁵³ QUU, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page 30.

¹⁵⁴ WS Atkins/Cardno, *Final Report; Detailed Review of Sydney Water Corporation's Operating and Capital Expenditure*, November 2011, page 85.

¹⁵⁵ \$37.4 million in 2012/13 and \$19.4 million in 2011/12.

¹⁵⁶ Unitywater Interim Price Monitoring Submission, dated August 2012, page 94.

In the QCA's 2011/12 Interim Price Monitoring Report, the nominated amount of \$52 million for corporate costs for QUU was deemed to be efficient.¹⁵⁷ QUU has subsequently revised this figure to \$58.2 million and increased the amount for corporate costs in 2012/13 to \$68.4 million after transferring 31 staff from corporate to operations.

Accepting the amount of \$58.2 million for 2011/12 as efficient,¹⁵⁸ the increase of 2012/13 over 2011/12 is around \$14.2 million (\$10.2 million plus \$4.0 million) after adjustment for the transfer of 31 staff out of corporate. If the additional cost now included in the revised 2011/12 corporate costs is in fact double counted, the increase is inflated by a further \$6.0 million.

It is Halcrow's judgement after taking into account these various factors, including the inherent difficulties of comparing corporate cost across entities, that approximately 25 percent or \$4 million of this additional \$14.2 million is inefficient. The adjusted efficient amount of corporate costs is \$64.4 million.

5.3.5 Other Materials and Services

5.3.5.1 Introduction

As shown in Table 5.47, Other Materials and Services expenditure is estimated to be \$144.2 million in 2012/13. This is an increase of 11.1 percent over 2011/12 and represents 54.3 percent of total operating expenses when the cost of bulk water is excluded.

Table 5.47:¹⁵⁹ QUU Other Materials and Services Costs – Summary Assessment

	2010/11	2011/12	2012/13	2013/14	2014/15
Total Other Materials and Services Expenses (\$'000 nominal)	83,936.2	129,829.9	144,182.6	141,699.8	154,671.2
Proportion of Total Regulated Operating Expenditure (excluding Bulk Water)	39.9%	54.0%	54.3%	53.3%	54.4%
Year-on-Year Percentage Change	-	54.7%	11.1%	-1.7%	9.2%

5.3.5.2 Other Materials and Services Expenditure by Service

Table 5.48 shows a breakdown of Other Materials and Services expenditure by service, whilst Table 5.49 shows the year-on year movement in each case.

¹⁵⁷ QCA, *Final Report; SEQ Interim Price Monitoring for 2011-12; Part B - Detailed Assessment*, March 2012, page 101.

¹⁵⁸ The adjustment figure of \$6.2 million added to 2011/12 Corporate Costs is related to the expensed portion of the ICT capital program which was separately assessed as efficient (refer: QCA, *Final Report; SEQ Interim Price Monitoring for 2011-12; Part B - Detailed Assessment*, March 2012, page 99).

¹⁵⁹ Derived from QUU's Submission to QCA, Table 5.11.1, dated 31 August 2012.

Table 5.48:¹⁶⁰ QUU Other Materials and Services Expenses (\$'000 nominal)

	2010/11	2011/12	2012/13	2013/14	2014/15
Water	32,867.2	59,758.6	68,034.8	63,951.8	68,423.7
Wastewater	43,498.7	59,760.4	65,412.7	66,745.0	73,953.8
Trade Waste	7,570.2	10,310.9	10,735.1	11,002.9	12,293.7
Total	83,936.2	129,829.9	144,182.6	141,699.8	154,671.2

Table 5.49: QUU Other Materials and Services Expenses – Year-on-Year Percentage Change (based on \$nominal)

	2010/11	2011/12	2012/13	2013/14	2014/15
Water	-	81.8	13.8	-6.0	7.0
Wastewater	-	37.4	9.5	2.0	10.8
Trade Waste	-	36.2	4.1	2.5	11.7
Total	-	54.7%	11.1%	-1.7%	9.2%

Other materials and services expenses incurred in providing wastewater and trade waste services comprise 52.8 percent of the total in 2012/13; expenses incurred providing water services make up the remaining 47.2 percent.

Expenses incurred providing water services increase by 13.8 percent in 2012/13 and are the major contributor to the overall increase. As previously mentioned, QUU has indicated that this relative increase is the result of a reallocation of costs; it has attempted to develop more accurate approaches to cost allocation using individual costing models for operational activities that it undertakes on a regular basis.

QUU has also identified an enhanced Planned Maintenance Program as primary driver of expenditure increases; it expects that this program will have a stronger focus on water than wastewater assets in 2012/13.

5.3.5.3

Unit Costs (Other Materials and Services Expenditure) of Service Provision

Table 5.50 shows the change in other materials and services expenses incurred in providing services relative to both the volume of water purchased by QUU and the number of wastewater properties (as an indicator of the change in customer numbers). This reveals that:

- Total other materials and services expenditure (per unit of water purchased) increase by 7.3 percent to \$1.10 per kilolitres in 2012/13; and
- Total other materials and services expenditure (per number of wastewater properties) increase by 9.3 percent to \$287.99 per property in 2012/13.

¹⁶⁰ Derived from QUU's Submission to QCA, Table 5.11.1, dated 31 August 2012.

The difference between the two is largely driven by the assumed growth in water consumption per customer.

Table 5.50: Analysis of Expenditure Variances – Other Materials and Services Expenses

	2010/11	2011/12	2012/13	2013/14	2014/15
Total Other Materials and Services Expenses (\$'000 nominal)	83,936.2	129,829.9	144,182.6	141,699.8	154,671.2
ML purchases	120,314	126,456	130,834	134,887	139,089
\$/kL	0.70	1.03	1.10	1.05	1.11
% change	-35.3%	47.2%	7.3%	-4.7%	5.9%
Properties Served	484,663	492,741	500,650	508,724	516,968
\$/property	173.18	263.48	287.99	278.54	299.19
% change	-32.4%	52.1%	9.3%	-3.3%	7.4%

Source Worksheet 5.4.1; Interim Price Monitoring Information Return 2012/13 – Data Template

For comparative purposes, it is noted that the equivalent unit rates for Unitywater are substantially less, as follows:

- Other materials and services expenditure per unit of water purchased is forecast to increase by 34.1 percent to \$0.37 per kilolitre in 2012/13; and
- Other materials and services expenditure per number of wastewater properties is forecast to increase by 39.7 percent to \$76.35 per property.

A similar analysis, but based on other materials and services expenditure incurred in providing water supply services (excluding the cost of bulk water) and wastewater services respectively, is presented in Table 5.50. This again shows increases substantially in excess of general inflation, with specific increases in 2012/13 as follows:

- Water related other materials and services expenditure per unit of water purchased increases by 10.0 percent to \$0.52 per kilolitre; and
- Wastewater related other materials and services expenditure per number of wastewater properties increases by 7.7 percent to \$130.66 per property.

Table 5.51: Analysis of Other Material and Services Expenditure Variances –Service Related

	2010/11	2011/12	2012/13	2013/14	2014/15
Water Expenditure	32,867.2	59,758.6	68,034.8	63,951.8	68,423.7
Drinking Water Purchases (ML)	120,314	126,456	130,834	134,887	139,089
\$/kL	0.27	0.47	0.52	0.47	0.49
% change	-43.8%	73.0%	10.0%	-8.8%	3.8%
Wastewater Expenditure	43,498.7	59,760.4	65,412.7	66,745.0	73,953.8
Wastewater Properties Serviced (No)	484,663	492,741	500,650	508,724	516,968
\$/property	89.75	121.28	130.66	131.20	143.05
% change	-25.5%	35.1%	7.7%	0.4%	9.0%

Source Worksheet 5.4.1; Interim Price Monitoring Information Return 2012/13 – Data Template

Again for comparative purposes, it is noted that the equivalent unit rates for Unitywater are as follows:

- Water related other materials and services expenditure per unit of water purchased is forecast to increase by 45.3 percent to \$0.13 per kilolitre in 2012/13; and
- Wastewater related other materials and services expenditure per number of wastewater properties is forecast to increase by 33.4 percent to \$41.57 per property.

5.3.5.4 Other Materials and Services Expenses by Region

The overall movements in other materials and services expense mask significant movements in costs attributed to individual regions, as illustrated in Table 5.52 (which shows actual cost distribution) and Table 5.53 (which shows year-on-year variations by region and service).

The Brisbane region accounts for 76.4 percent of the total other materials and services expenses followed by Ipswich with 17.3 percent. Brisbane's expenses are static in 2012/13 while the expenses attributed to Ipswich increase by 87.2 percent.

Expenses attributed to Brisbane for water activities increase by 3.7 percent while the equivalent figure for Ipswich increases by 104 percent. Expenses attributed to Brisbane for wastewater activities reduce by 2.8 percent in 2012/13 while the equivalent figure for Ipswich increases by 76 percent.

As noted in respect of other expenditure components, QUU has indicated that the disproportionate increase for Ipswich in 2012/13 is primarily driven by implementation of the Planned Maintenance Program, which will involve extending the asset management approach implemented in Brisbane to the Ipswich region.

Table 5.52: Other Materials and Services Expenses by Region (\$'000 nominal)

Region	Service	2010/11	2011/12	2012/13	2013/14	2014/15
Brisbane	Water	29,172.8	51,614.9	53,504.7	49,416.6	53,327.4
	Wastewater	36,592.7	48,893.2	47,507.9	48,485.4	54,704.3
	Trade Waste	7,036.6	9,401.9	9,135.5	9,323.4	10,519.3
	<i>Total</i>	<i>72,802.1</i>	<i>109,910.0</i>	<i>110,148.1</i>	<i>107,225.4</i>	<i>118,551.0</i>
Ipswich	Water	2,558.1	5,343.9	10,899.8	11,169.8	11,629.5
	Wastewater	4,166.2	7,096.3	12,487.5	13,111.0	13,852.1
	Trade Waste	533.7	909.0	1,599.6	1,679.5	1,774.4
	<i>Total</i>	<i>7,258.0</i>	<i>13,349.2</i>	<i>24,986.9</i>	<i>25,960.3</i>	<i>27,256.0</i>
Lockyer Valley	Water	539.6	1,017.1	1,449.4	1,325.9	1,375.9
	Wastewater	343.0	1,045.6	1,734.8	1,718.5	1,801.3
	Trade Waste	0.0	0.0	0.0	0.0	0.0
	<i>Total</i>	<i>882.6</i>	<i>2,062.7</i>	<i>3,184.2</i>	<i>3,044.4</i>	<i>3,177.2</i>
Scenic Rim	Water	391.9	1,004.5	1,346.0	1,403.9	1,430.0
	Wastewater	923.1	1,779.0	2,235.3	2,303.7	2,409.1
	Trade Waste	0.0	0.0	0.0	0.0	0.0
	<i>Total</i>	<i>1,315.0</i>	<i>2,783.5</i>	<i>3,581.2</i>	<i>3,707.6</i>	<i>3,839.0</i>
Somerset	Water	204.8	778.1	835.0	635.7	660.9
	Wastewater	1,473.7	946.3	1,447.1	1,126.4	1,187.0
	Trade Waste	0.0	0.0	0.0	0.0	0.0
	<i>Total</i>	<i>1,678.5</i>	<i>1,724.4</i>	<i>2,282.1</i>	<i>1,762.1</i>	<i>1,847.9</i>
Total	Water	32,867.2	59,758.6	68,034.8	63,951.8	68,423.7
	Wastewater	43,498.7	59,760.4	65,412.7	66,745.0	73,953.8
	Trade Waste	7,570.2	10,310.9	10,735.1	11,002.9	12,293.7
Total		83,936.2	129,829.9	144,182.6	141,699.8	154,671.2

Table 5.53: Other Materials and Services Expenses by Region – Year-on-Year Percentage Change (based on \$nominal)

Region	Service	2010/11	2011/12	2012/13	2013/14	2014/15
Brisbane	Water	-	76.9%	3.7%	-7.6%	7.9%
	Wastewater	-	33.6%	-2.8%	2.1%	12.8%
	Trade Waste	-	33.6%	-2.8%	2.1%	12.8%
	<i>Total</i>	-	51.0%	0.2%	-2.7%	10.6%
Ipswich	Water	-	108.9%	104.0%	2.5%	4.1%
	Wastewater	-	70.3%	76.0%	5.0%	5.7%
	Trade Waste	-	70.3%	76.0%	5.0%	5.7%
	<i>Total</i>	-	83.9%	87.2%	3.9%	5.0%
Lockyer Valley	Water	-	88.5%	42.5%	-8.5%	3.8%
	Wastewater	-	204.8%	65.9%	-0.9%	4.8%
	Trade Waste	-	-	-	-	-
	<i>Total</i>	-	133.7%	54.4%	-4.4%	4.4%
Scenic Rim	Water	-	156.3%	34.0%	4.3%	1.9%
	Wastewater	-	92.7%	25.6%	3.1%	4.6%
	Trade Waste	-	-	-	-	-
	<i>Total</i>	-	111.7%	28.7%	3.5%	3.5%
Somerset	Water	-	279.9%	7.3%	-23.9%	4.0%
	Wastewater	-	-35.8%	52.9%	-22.2%	5.4%
	Trade Waste	-	-	-	-	-
	<i>Total</i>	-	2.7%	32.3%	-22.8%	4.9%
Total	Water	-	81.8%	13.8%	-6.0%	7.0%
	Wastewater	-	37.4%	9.5%	2.0%	10.8%
	Trade Waste	-	36.2%	4.1%	2.5%	11.7%
Total		-	54.7%	11.1%	-1.7%	9.2%

5.3.5.5 Opportunities for efficiencies

Again as previously reported (refer Section 5.2.6.5) QUU engaged consultants, Third Horizons, to undertake an efficiency study of QUU's activities. In a report to the QUU Board dated October 2011,¹⁶¹ they identified the following opportunities to improve procurement:

- *“Detailed spend analysis has revealed opportunities to improve the effectiveness of the procurement division. There is a significant opportunity to rationalise suppliers, move more spend to contracts and reduce transaction costs. A saving opportunity of \$9m has been estimated (this figure includes the opportunity to migrate services away from BCC to alternative third party providers).”*

¹⁶¹ Third Horizons Consulting Partners, *Queensland Urban Utilities; Cost Efficiency Review; Phase 2 – Board Presentation*, 18 July 2011.

- *A high-level analysis of the supply chain processes and channels of supply indicate there is a potential saving opportunity of \$300k (this figure is included in \$700k for Procure to Pay).*
- *The current procure to pay processes are manual and cause transaction costs of \$1.7m pa. 43% of all invoices are paid late. Optimising the process and introducing new payment channels (P-Card) are estimated to reduce transaction costs by more than \$700k.”*

Halcrow notes that not all of these opportunities relate solely to Other Materials and Services expenditure, however, given the predominance of this expenditure component with the total operating expenditure budget, it does provide significant scope for the realisation of efficiency gains.

In response to the Third Horizon report, QUU has quantified savings of \$2.2 million in Other Material and Services expenditure in 2012/13.¹⁶² QUU indicates that these savings are built into the 2012/13 budget.¹⁶³

5.3.5.6 Movements in components of Other Materials and Services

There are many items that make-up other materials and services and annual variations are influenced by:

- Changes in cost allocations both between expense line items and between capital and operating expenditure;
- The maintenance schedule and the relative emphasis between proactive and reactive maintenance;
- Growth and targeted service levels (QUU is seeking to ensure consistency across all areas of its operations);
- Procurement policy; and
- Abnormal events including the 2011 flood and ICT separation program.

The largest individual item in other materials and services, which totals \$22.7 million, is titled ‘Services – Capital Program’. This item, further details of which are provided in QUU’s 2012/13 budget documentation,¹⁶⁴ are expensed components of capital projects.

Table 5.54 shows the Other Materials and Services expenditure items with the largest variations between 2011/12 (actual) and 2012/13 (forecast). The item with the largest variation is Contractor/Sub-Contractor costs which are forecast to increase by \$10.8 million to \$15.2 million. However, its inclusion here as a source of variation in Other Materials and Services is complicated by the differences in cost allocations between QUU’s statutory accounts and QUU’s management accounts (used for reporting to the QCA).¹⁶⁵ Under QUU’s statutory accounts, contract labour is included under other materials and services while in the return to the QCA they are included under Employee expenses.

¹⁶² Email QUU to QCA, 7 October 2011.

¹⁶³ Email QUU to Halcrow & QCA dated 5 October 2012.

¹⁶⁴ QUU, *Operating Budget Development 2012/13 (Fourth Draft)*; (post) *May Board Meeting 2012*, Table 6.4.3.

¹⁶⁵ QUU response to Halcrow’s Request for Information (QUU RFI-2) (attachment to email dated 26 November 2012).

Table 5.54: Other Materials and Services Expenses – Major Variances

Expenditure Item	2011/12 (\$'000)	2012/13 (\$'000)	Variation	
			\$'000	%
Bad & Doubtful Debts	3,815.9	2,086.3	-1,729.6	-45.3
Consultancy Fees	2,697.4	3,205.8	508.4	18.8
Consultancy Fees - New Initiatives	634.4	2,030.0	1,395.6	220.0
Contractor/Sub-Contractor Costs	4,415.3	15,235.6	10,820.4	245.1
Insurance Premiums & Related Charges	2,433.3	3,800.0	1,366.7	56.2
Plant & Equipment Hire - Non-Monthly Hire	3,342.4	4,206.8	864.4	25.9
Postage	1,253.2	2,064.9	811.7	64.8
Printing	1,603.1	863.6	-739.5	-46.1
Rent - Property	3,905.7	4,857.4	951.7	24.4
Services - Customer Call Centre TSA	3,957.4	0.0	-3,957.4	-100.0
Services - ICT Desktop Support TSA	8,863.8	9,598.0	734.2	8.3
Services - New Initiatives	840.1	3,960.9	3,120.8	371.5
Services - Payroll Services TSA	1,111.1	1,790.0	678.9	61.1
Total	38,873.2	53,699.4	14,826.2	38.1

Note: Figures for 2011/12 are actual expenditure derived from information provided by QUU.^{166, 167}

QUU's explanations of the variations between 2011/12 and 2012/13 are variously based on its statutory accounts and its management accounts. It is assumed, however, that the contractor/sub-contractor costs included here relate to the contracting out of services rather than the temporary engagement of labour for work that would otherwise be performed by QUU's own staff. To the extent possible, comments on individual items are provided below.

Some of the variation between individual items (eg. Call Centre TSA) can be explained by the decision of Brisbane City Council to cease providing support services to QUU and the need for QUU to source these services either in-house or by contracting with new suppliers. In the case of the call centre, QUU is hiring new staff (29FTE) to

¹⁶⁶ Actual expenditure in 2011/12 derived from QUU spreadsheet *QCA 12-13 (Budget) and 11-12 (Actual) Total Costs with QCA definitions.xlsx* included in information pack supplied 12 October 2012.

¹⁶⁷ Halcrow notes QUU's contention (presented in its *QUU Response to Revised Halcrow Report* (attachment to email dated 19 December 2012)) that the analysis presented in Table 5.54 should be undertaken on the basis of forecast rather than actual 2011/12 expenditure. Halcrow is of the view that analysis of variations based on actual 2011/12 expenditure provides a clearer understanding of the true extent of such variations, particularly given that actual 2011/12 expenditure exceeds forecast by only 1 percent and a breakdown of the forecast has not been provided for the purposes of this review.

undertake this task, but still relying on Brisbane City Council to provide an after hour's call centre service.¹⁶⁸

QUU has provided further explanation of these variances,¹⁶⁹ which is presented in Table 5.55.

Table 5.55: Other Materials and Services Expenses – Explanation of Major Variances

Expenditure Item	Explanation of Variance
Bad & Doubtful Debts	The provision for doubtful debts for 2011/12 was originally set with no real history to guide QUU - primarily because councils previously had other mechanisms to deal with these debts, such as lien on land. During the last financial year it was established that the 2011/12 provision was relatively conservative and therefore the provision was reduced for 2012/13 to in an attempt to reflect a more accurate estimate of bad and doubtful debts.
Consultancy Fees	This cost item is difficult to compare on a year on year basis as it is primarily built up each year based on specialised advice and/or design and planning assistance across the whole business. The two biggest items for the 2012/13 budget is \$400k for consultancy services for the Office of the CITO which relates to assisting with things such as IT strategies, and \$250k for the Board and Office of the CEO for general consultancies as they are required. After this, there is a significant number of smaller amounts for specialised consultancies. In comparison, the Consultancy Fees costs for 2011/12 related to items such as efficiency review (Third Horizons undertook the review), broad engineering advice and organisational governance advice.
Consultancy Fees - New Initiatives	The primary factor influencing this item is the consultancy fees set aside for the QCA regulatory review (previously identified in the New Initiatives list). This new initiative also includes the consultancy fees associated with the development of the Price Path that has been required during 2012/13. The main difference from the actual information for 2011/12 is that the budget that was included for this consultancy for 2011/12 did not occur as it was expected that the regulatory framework would be moving towards deterministic, thereby requiring a much greater expenditure on consultancies.
Contractor/Sub-Contractor Costs	The noted increase in contractor/sub-contractor costs is primarily driven by the Board approved increase in the 2012/13 planned maintenance program (previously discussed with Halcrow/QCA). Much of this activity will be outsourced to contractors.
Insurance Premiums & Related Charges	During 2011/12, QUU was co-insured with BCC which meant that the costs were shared. As a result of the 2011 flood and subsequent claims for the insurance company, issues were identified in having this co-insurance arrangement with BCC and it was decided that QUU should have its own insurance policy. The 2011 floods have also materially increased the premiums that QUU is required to pay for sufficient insurance cover.
Plant & Equipment Hire - Non-Monthly Hire	QUU has a costing model for the Plant and Equipment Hire that is based on average cost of hired equipment per job and number of jobs for the year. The number of maintenance jobs (both planned and responsive, but particularly planned) is budgeted to increase substantially in 2012/13 which has lead to a subsequent increase in the budgeted cost for Plant and Equipment Hire for the business.

¹⁶⁸ Discussions with QUU, 2 October 2012.

¹⁶⁹ QUU, *Materials and Services* (response to QCA/Halcrow Request), attached to: Email QUU to Halcrow and QCA dated 24 October 2012.

Expenditure Item	Explanation of Variance
Postage	Postage and Printing was previously through the same contract – the contract (and subsequent costs) were separated in 2011/12, however, the allocation between the two was still being worked on during the development of the 2012/13 budget. Therefore these two items should be looked at together, with the increase in postage and the decrease in printing effectively being offset by each other – there is no change in activity that has led to the increase/decrease in either item.
Printing	
Rent - Property	<p>During 2010/11, it was unclear whether two of QUU's premises (Bunya Street and Main Myrtle town Road) were to be transferred over to QUU during transition. The rent was therefore accrued at the end of 2010/11 which reversed into 2011/12. Therefore when it was removed from the budget, two 'lots' were removed from 2011/12 and only one from 2012/13. This issue equated to approximately \$500k.</p> <p>\$130k relates to increase in rental space at the Transit Centre for the Call Centre.</p> <p>Other smaller changes relate to changed conditions in certain sites (\$66k at Curtin Avenue for after-hours store and \$45k for changed depot at Gatton), general increases and changes to cleaning arrangements.</p>
Services - Customer Call Centre TSA	This was the removal of the TSA for the Call Centre – as outlined above, this was budgeted to be completed by June 2012 therefore no costs were allocated in the 2012/13 budget.
Services - ICT Desktop Support TSA	The increase in this item relates to a combination of the annual increase built into the contract and also the increase in temporary and permanent staff from the ICT Separation Program and the Call Centre new initiatives which have impacted on the calculation of the TSA payment.
Services - New Initiatives	This relates to a number of the New Initiatives outlined previously – Safety Leadership Program (\$850k), Call Centre Project Costs (\$800k), Relocation Project (\$250k), Pensioner Verification (\$500k), On-Line Customer Strategy (\$150k) – as well as a number of smaller projects that come under the New Initiatives.
Services - Payroll Services TSA	<p>This item increased through the fact that it also includes the payroll budget project costs, as well as a budgeted overlap in the provision of the services during the year.</p> <p>The payroll budget project relates to the replacement of the payroll system through the system separation. QUU is getting a new HR system which required costs in relation to things such as scoping and selection and workshops in preparation for implementation.</p>

Whilst the explanations presented in Table 5.55 provide reasoned justification for the variances in principle, Halcrow has sought further clarification in a number of cases, which are further discussed as follows:

- *Contractor/ Sub-contractor Costs – Planned Maintenance:*

Halcrow sought to understand why there is no apparent reduction in maintenance cost following the implementation of a planned maintenance. An optimised maintenance program will typically incorporate a planned/preventative maintenance program; this is understood to be QUU's objective. Moving to such a maintenance approach would, however, be expected to result in a reduction of overall maintenance expenditure, if not immediately, then in following years. Halcrow note that QUU's forecast operating expenditure remains constant in nominal terms (effectively a minor reduction real terms) in 2013/14, however, are forecast to increase significantly again in 2014/15.

QUU has advised¹⁷⁰ that its planned significant increase in planned maintenance activities in 2012/13 relate to corrective maintenance of its hydrant stock and condition monitoring of its 'avoid fail' assets such as trunk sewers and water mains. It has further indicated that these programs are not expected to impact its responsive budget in the short term, although these and other planned maintenance programs will lead to efficiencies (reductions in the responsive budget) in future years.

Halcrow is of the view that, although planned, these programs are either of a 'catch up' nature or involve condition data collection (an essential input to developing an optimised maintenance program. The nature and quantum of the expenditure does, however, tend to indicate a substantial shortfall in previous maintenance activities; this is likely to be generating longer term inefficiencies.

- *Consultancy Fees:*

Given that the move to deterministic regulation has not eventuated, this expenditure is no longer required. QUU has advised¹⁷¹ that these funds were diverted to the development of the Price Mitigation Path (for the five year period commencing 2013/14) in 2012/13, and will be scaled back in future years.

Halcrow notes the requirement for QUU to develop a Price Mitigation Plan, however, the incremental increase of \$1.37 million suggests very significant consultant input.

- *Insurance Premiums and Related Charges:*

Halcrow sought to understand the process adopted by QUU for the procurement of its own insurance cover. QUU has advised that (in 2011) it appointed Aon Global to broker its insurance policies. The approach adopted to procure product is as follows:¹⁷²

- *“Generally, a quote slip is produced by Aon, noting the subject of insurance i.e. property, casualty and/or environmental risk and the value of coverage required. Underwriters then, analyse the risk to reward ratio and provide terms (premium) back to Aon. Aim of the above exercise is to market a specific policy with at least 3 underwriters depending on their ability.*
- *Due to QUU's diverse risk profile, there are limited placement options, for instance, QUU's flood risk had to be distributed among 5 panel underwriters due to capacity shortfall. Hence, it's our intent to procure a favourable product at a competitive price (where possible).”*

Whilst the manner in which Aon Global was engaged to provide brokerage services is not apparent to Halcrow, the approach to actual product procurement appears appropriate.

¹⁷⁰ QUU response to Halcrow's Request for Information (QUU RFI-2) (attachment to email dated 26 November 2012).

¹⁷¹ Ibid.

¹⁷² Ibid.

- *Services – New Initiatives:*

Halcrow sought to understand the level of potential offsets (expenditure savings) that will be derived from the activities identified as ‘new initiatives’. QUU indicated that its approach in identifying ‘new initiatives’ is principally to be able to separate and monitor certain elements of expenditure; the new initiatives are not necessarily required to generate offset savings.¹⁷³

QUU has further explained that some initiatives may result in savings (eg. Safety program leading to reduced risk profile for future year workcover premiums) or replace another cost (eg. the cost associated with an in-house call centre have replaced the costs incurred under the BCC Call Centre TSA).

As discussed in **Section 5.2.6.6**, Halcrow has assessed that a number of the identified ‘new initiatives’ should be more appropriately assessed as business as usual expenditure, which has had the impact of increasing QUU’s level of base operating expenditure.

5.3.5.7 Prudence and Efficiency of QUU’s 2012/13 Other Materials and Services

Halcrow is satisfied that QUU’s other materials and services expenditure is driven by legal and operational need. There is no indication of expenditure incurred to provide excessive service levels or long term redundant operational capacity. It is therefore considered prudent.

However, in the short term, the expenditure for other materials and services in 2012/13 is inflated by duplication of service provision. For example, payroll services are in transition from Brisbane City Council to a new service provider, with cost being incurred in both cases.

Many of the items included under other materials and services are considered elsewhere (eg. Corporate Costs) and for this reason final recommendations on efficiency are based on the aggregate operating expenditure figures, as discussed in **Section 5.7**.

5.4 Cost Allocation

5.4.1 Overview

In order to assess the veracity of the breakdown of expenditure forecasts by service and region, Halcrow has undertaken a review of QUU’s approach to the allocation of costs.

QUU has provided the following documents in support of its cost allocation policies:

- 2011/12 Annual Report including notes to the accounts and unqualified audit opinion provided by the Queensland Auditor-General;
- Capitalisation Policy – a Brisbane City Council document titled *Brisbane Water Capitalisation Process*, dated 15 May 2008;
- Intangible Assets Capitalisation Policy – QUU document titled *Intangible Assets Policy*, with an ‘active date’ shown as 12 March 2012; and

¹⁷³ Ibid.

- QUU Allocation Policy – QUU document titled *Allocation of support costs to direct products*, undated.

QUU also provided a verbal explanation of its cost allocation policies during meetings on 2 and 3 October 2012.

Cost allocation policies are necessary to guide the appropriate allocation of costs in support of robust cost tracking, product costing and ultimately product pricing. For example:

- The allocation of costs is important to ascertaining where money is being spent and whether expenditure is on budget.
- If an item is expensed then it is expected to be recovered through prices in the year incurred, whereas if it is classified an asset then it is to be recovered over the life of the asset.
- Prices for specific services (eg. water, wastewater) and for different regions (eg. Brisbane, Ipswich) are based on the expenditure incurred in providing those services in those regions.

5.4.2 Principles of Cost Allocation

The QCA¹⁷⁴ and other Australian regulators¹⁷⁵ have established principles for cost allocation.

Consistent with these principles, QCA states¹⁷⁶ in the information requirements for this inquiry that the costs:

“... must be disaggregated by each entity according to the following deemed categories:

- (a) each Activity;*
- (b) each geographic area;*
- (c) each core service and (in aggregate) non-regulated services.....”*

and that these allocations must be based on the principle that:

- “(a) amounts are directly attributable to that category;*
- (b) amounts which are not directly attributable to a category must be allocated on a causal basis, except where a causal relationship cannot be reasonably established. Amounts may be allocated on non-causal basis provided that:*

¹⁷⁴ QCA publications include:

- QCA, *SEQ Interim Price Monitoring, Information Requirements for 2012-13*, August 2012, page 5.
- Deloitte, *Queensland Competition Authority; SunWater; Administration Cost Review Phase 2*, 25 August 2011.
- PricewaterhouseCoopers, *Allocating capital costs of bulk water supply assets*, September 2010.

¹⁷⁵ For example:

- Australian Competition and Consumer Commission, *Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules*, July 2011.
- Australian Energy Regulator, *Electricity distribution network service providers, Cost allocation guidelines*, June 2008.
- IPART, *Draft cost allocation guide, Water Industry Competition Act 2006*, 2008.

¹⁷⁶ QCA, *SEQ Interim Price Monitoring, Information Requirements for 2012-13*, August 2012, page 5.

- (i) *there is likely to be a strong positive correlation between the non-causal basis and the actual cause of resource or service consumption or utilisation that those costs represent; or*
- (ii) *the cost to derive the causal allocation outweighs the benefits of allocating items on that basis; and*
- (iii) *the aggregate of all amounts allocated on a non-causal basis is not material to the price monitoring information return.”*

Halcrow has reviewed QUU’s approach to cost allocation in light of these principles/guidelines.

5.4.3 Anomalies in QUU’s Submitted Figures

QUU has not followed QCA requirements¹⁷⁷ for reporting corporate costs, as follows:

- QUU reports its employee expenses, electricity, other materials and services in aggregate and does not separate the corporate cost component of these in the return to the QCA.¹⁷⁸
- In contrast to Unitywater, QUU shows no expenditure against the QCA expenditure categories of “other core water services” and “other core wastewater services”.¹⁷⁹
- QUU has identified that some cost components (eg. electricity) are not properly accounted for by region and service.

5.4.4 QUU’s Approach to Cost Allocation

5.4.4.1 General

As noted in Section 5.4.1, QUU has provided a number of documents in support of its cost allocation policies. The following discussion focuses on the documents/policies provided.

5.4.4.2 Annual Accounts

The unqualified audit opinion from the Auditor General confirms that QUU complies with accounting standards (including capitalisation policies) in the preparation of its annual accounts.

In conformity with these, the Annual Report¹⁸⁰ states (page 68):

“Labour and materials expenditure, which are directly attributable to the purchase or construction of an asset, is considered capital expenditure. Expenditure necessarily incurred in either maintaining the operational capacity of assets or ensuring that the original life estimates are achieved, is considered maintenance and is treated as an expense as incurred.”

and on page 69:

¹⁷⁷ As nominated in: QCA, *SEQ Interim Price Monitoring Information Requirements for 2012-13*, August 2012.

¹⁷⁸ QCA, *SEQ Interim Price Monitoring Information Requirements for 2012-13*, August 2012, s5.11.1(k), page 15.

¹⁷⁹ QUU Interim Price Monitoring Information Return – Data Template, Worksheet 5.11.1.

¹⁸⁰ QUU, 2011/12 Annual Report.

“Property, plant and equipment under construction at year end is valued at cost, including the cost of materials and direct labour and an appropriate proportion of overheads excluding administration cost. Assets under construction are not depreciated until they are complete and commissioned ready for use.”

5.4.4.3 Capitalisation Policy

Similarly, in accordance with Accounting Standards, QUU’s adopted capitalisation policy states:¹⁸¹

“A project will be capitalised (asset) if its meets the following criteria:

- *Expenditure must result in an economic benefit (future service potential) embodied in the asset;*
- *Council must have control over the asset;*
- *The benefit must be capable of being measured reliably; and the benefit must last greater than one year;*
- *The current replacement cost is greater than \$5,000 (materiality).*

If it does not meet all the above criteria, the equipment will not be capitalised as an asset; instead it is expensed.

When expenditure improves the condition of the asset beyond its originally assessed standard of performance or capacity then the expenditure must be capitalised (ie. added to the carrying amount of the asset). The tests for determining whether these conditions are met are based upon:

- *An increase in the annual service potential provided by the asset; or*
- *An increase in the useful life of the asset.”*

5.4.4.4 Intangible Asset Capitalisation Policy

QUU’s Intangible Assets Policy¹⁸² also stresses its links with Accounting Standards and provides some practical advice on applying the standards.

5.4.4.5 QUU allocation policy

QUU’s twenty four (24) character general ledger account number¹⁸³ allows costs to be reported on various bases including by responsibility centre, activity (water or sewerage), project and location (region).

Where possible costs are allocated directly to these cost categories. There are costs (indirect costs, common costs (eg. support costs)) that cannot be “specifically attributed”¹⁸⁴.

QUU has identified the following types of support costs:¹⁸⁵

“The overhead allocation process is used to allocate three groups of costs:

¹⁸¹ Brisbane City Council, *Brisbane Water Capitalisation Process*, 15 May 2008, Section 1.4.

¹⁸² QUU, *Intangible Assets Policy*, active date 12 March 2012.

¹⁸³ QUU, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page 28.

¹⁸⁴ PricewaterhouseCoopers, *Allocating capital costs of bulk water supply assets*, September 2010, page 4.

¹⁸⁵ QUU, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, page 29.

1. *Direct Labour on-costs recovery – all on-costs (payroll tax, super, workers comp, public holidays annual leave, long service leave and sick leave) all get coded in the system to support irrespective of whether the employee is direct or indirect.*
2. *Local support labour and material costs – all support staff employee and material costs that are coded to a direct area.*
3. *Corporate Costs – support staff employee and material costs who work in corporate areas.”*

Table 5.56 shows the basis of cost allocation for items that are not allocated directly.¹⁸⁶

Table 5.56: Adopted Basis of Cost Allocation

Description	Basis of allocation
Sundry property, plant and equipment and buildings with no direct link to an activity (ie. water or sewerage).	RAB for infrastructure water and sewerage assets. ¹⁸⁷
Establishment costs, corporate systems and billing systems.	Stage 1 – across regions using regional percentage of total water and sewerage properties as at 1 July 2010. Stage 2 – across activities within regions using water and sewerage property split.
Sewage activity in Brisbane and Ipswich regions allocated between domestic grade sewage and trade waste.	Sewage flows and loads contributed by each customer group; sourced from sewage cost model.
Support services: (a) Direct labour on-costs; (b) Local support labour and material costs; (c) Corporate labour and material costs.	All are allocated to direct areas by: (a) direct labour \$; (b) direct labour hours x hourly charge out rate for local support; (c) direct labour hours x hourly charge out rate for corporate services.

5.4.5 Compliance with guidelines and common practice

5.4.5.1 General

QUU’s account classifications allow direct cost to be attributed to direct areas, eg. responsibility centre, region, activity. This complies with the QCA information requirements.¹⁸⁸

QUU has established bases for the allocation of indirect and common costs. At issue is whether these bases of allocation are adequate.

QUU has forecast allocated costs of \$113.6 million or 21 percent of total operating expenditure (including bulk water) in 2012/13.¹⁸⁹ The ratio of allocated costs to total

¹⁸⁶ QUU, *QCA Interim Price Monitoring: Information Return 2012/13*, 31 August 2012, pages 28 & 49.

¹⁸⁷ QUU email to Halcrow dated 13 November 2012.

¹⁸⁸ QCA, *SEQ Interim Price Monitoring, Information Requirements for 2012-13*, August 2012, page 5.

¹⁸⁹ QUU email to Halcrow dated 13 November 2012.

operating expenditure (excluding bulk water) is 43 percent. This latter figure is overstated if some of the bulk water cost also includes allocated costs.

5.4.5.2 Common practice

In 2011 QCA engaged Deloitte to review SunWater's cost allocation methodology.¹⁹⁰

SunWater proposed direct costed labour as an appropriate basis for allocating centralised cost.¹⁹¹ SunWater did indicate, however, that 18 percent of its centralised costs were allocated directly "based on an estimate of effort required".¹⁹² QUU's submission suggests that no local support costs or corporate costs are allocated directly.¹⁹³

It is of interest here, to review SunWater's arguments not to adopt other bases for cost allocation; these are summarised as:¹⁹⁴

- *"Number of customers – the cost of some centralised functions will be affected by the number of customers serviced. However, the relationship between customer numbers and related customer functions is not linear - the addition of one customer does not generate additional costs for the customer service function.*
- *Asset characteristics – some costs may be affected by the characteristics of certain assets. For example, older assets, critical assets and more complex assets may require more intensive asset management effort. the relationship between asset feature (age, replacement value etc) and centralised costs is imprecise, and will generally have no bearing on many non-asset management costs that are centralised.*
- *Transactions – some assets/ services involve more transactions which need to be supported by centralised resources. Assets involving a greater proportion of purchasing requirements (and customer transactions will arguably have a greater impact upon the level of centralised resources to support these transactions. However, these transactions only apply to a limited number of centralised activities and would not have broad relevance.*
- *Accordingly, selecting one of the above categories to allocate costs is likely to bias the outcome towards one of these measures. This could be remedied by using multiple drivers to allocate different costs types. However, this involves additional complexity Indeed, selecting different drivers can increase the scope for error as it may require a number of different cost relationships to be found when only a weak relationship exists. As such, it promotes illusory precision."*

Deloitte broadly supported SunWater's proposal to use direct costed labour as the cost allocation basis, but with several refinements to better target causal factors;¹⁹⁵ for example, the use of transactions to allocate procurement costs and linking functions to service contracts. In other cases Deloitte recognised that there may be no recognised driver of costs and direct costed labour was the best available alternative.

¹⁹⁰ Deloitte, *Queensland Competition Authority; SunWater; Administration Cost Review Phase 2*, 25 August 2011., page 81.

¹⁹¹ Sunwater, *QCA review of irrigation prices, Supplementary Information, Allocation of centralised costs*, February 2011, page 9.

¹⁹² Ibid, page 7.

¹⁹³ QUU, *QCA Interim Price Monitoring; Information Return 2012/ 13*, 31 August 2012, page 29.

¹⁹⁴ Sunwater, *QCA review of irrigation prices, Supplementary Information, Allocation of centralised costs*, February 2011, page 8.

¹⁹⁵ Deloitte, *Queensland Competition Authority; SunWater; Administration Cost Review Phase 2*, 25 August 2011., page 81.

In January 2010, the Australian Energy Regulator accepted Jemena's proposal to allocate shared costs on the basis of direct costs:¹⁹⁶

"Where costs are shared across the different categories of distribution services, JEN allocated these costs in accordance with the proportion of direct costs that have already been allocated to these services. Allocation of shared costs in accordance with the proportion of direct costs is a common shared cost allocation approach that is applied by a number of other electricity network businesses in their CAMs (cost allocation)."

Similarly, Sydney Water allocates indirect costs to the water, wastewater and stormwater services in proportion to direct costs.¹⁹⁷

In the case of QUU, direct costed labour is a more appropriate basis of cost allocation than total direct costs given the variation in and uncertainty over the reasonableness of other materials and services costs.

The Independent Pricing and Regulatory Tribunal of NSW (IPART) in its inquiry into bulk water prices charged by State Water adopted State Water's proposal to use FTEs (as a surrogate for direct costed labour) to allocate common costs:¹⁹⁸

"Salaries and wages are a key driver and a significant portion of State Water's total costs, and so represent a superior method of common cost allocation ..."

5.4.5.3 Compliance with guidelines

Direct costs:

QUU's systems enable it to comply with the QCA's information requirements for allocating direct costs, with the possible exception that some support and corporate costs should be able to be allocated directly (if not already practiced by QUU).

Halcrow notes SunWater's comment (referenced above) that 18 percent of its centralised costs are allocated directly. This could be achieved through service contracts and/or timesheets.

Indirect and common costs:

- *Sundry property, plant and equipment and buildings with no direct link to an activity:*

QUU nominates the Infrastructure RAB activity (water or wastewater) percentage as the basis of allocation. That is, these costs are allocated to either water or wastewater depending on the relative asset value (regulatory asset base) of the underlying infrastructure water and wastewater assets.

Halcrow has not sighted a causal link between the relative value of infrastructure assets and these sundry assets. Nor has QUU advised the amount of sundry assets so allocated.¹⁹⁹

¹⁹⁶ AER, *Final decision, Jemena Electricity Networks, cost allocation method*, February 2010, page 4.

¹⁹⁷ WS Atkins/Cardno, *Final Report; Detailed Review of Sydney Water Corporation's Operating and Capital Expenditure*, November 2011, page 85.

¹⁹⁸ IPART, *Review of bulk water charges for State Water Corporation: From 1 July 2010 to 30 June 2014*, June 2010, page 117.

SunWater has commented on the impreciseness of this basis of allocation (see above) for centralised costs. In the absence of any link between the two groups of assets, the advantage of this allocation basis over direct costed labour is uncertain.

- *Establishment costs, corporate systems and billing systems:*

The stated basis of cost allocation suggests the number of customers is the most reliable causal factor. The more homogeneous nature of an urban water system's customer base compared to an irrigation water service provider's customer base overcomes, in part, Sunwater's rejection of this approach. It aligns with the Deloitte more targeted approach.

Some corporate systems should be able to be more directly linked to projects and activities.

- *Sewage activity in Brisbane and Ipswich regions allocated between domestic grade sewage and trade waste:*

Sewage flows and loads by customer group are accepted as a suitable cost allocation base.

- *Support costs:*

A combination of direct costed labour (for labour on-costs) and direct labour hours (for local support and corporate cost) are applied to allocate support labour and material costs (as opposed to systems). The Deloitte analysis suggests that these could be refined further to include transaction numbers and where possible more targeted allocation of centralised labour and materials (eg. infrastructure services). However, it is noted the QCA accepted SunWater's arguments that there would be no clear benefit from these further refinements.²⁰⁰

5.4.6 Appropriateness of allocation approach

Halcrow considers QUU's policies for cost allocations are consistent with the information requirements.

The basis for allocation of indirect and common costs could be refined further but with no clear benefits over the cost incurred. It is not considered that such refinements would materially affect the assessment of the efficiency and prudence of QUU's expenditure.

However, in practice there are a number of exceptions where QUU does not meet QCA's information requirements²⁰¹ and where there are questions over its application of its cost allocation policies.

¹⁹⁹ QCA, *SEQ Interim Price Monitoring, Information Requirements for 2012-13*, August 2012, page 15, specifically:

"An entity is required to provide information on all operating expenditure items that have been allocated across entity business segments or asset categories, including a description of the item, the value in thousands of dollars, the basis of allocation (including the percentage split), reason for choosing the basis and any relevant notes from the business's annual report."

²⁰⁰ QCA, *Sunwater Irrigation Price Review 2012-17*, Volume 1, p300

²⁰¹ QCA, *SEQ Interim Price Monitoring, Information Requirements for 2012-13*, August 2012, page 15, specifically:

"An entity is required to provide information on all operating expenditure items that have been allocated across entity business segments or asset categories, including a description of the item, the value in thousands of dollars, the basis of allocation (including the percentage split), reason for choosing the basis and any relevant notes from the business's annual report."

5.5 Benchmarking (Operating Expenditure)

Halcrow has undertaken high level benchmarking, based on reported performance indicators,²⁰² of the level of operating expenditure incurred by QUU. The indicators adopted for this assessment consider the reported operating costs on a customer (per property), network (per kilometre of pipeline) and volume (per volume of service provided) basis. Customer based indicators are directly reported; others are derived from the reported information.

Comparators adopted for the purposes of this assessment are:

- Unitywater;
- Sydney Water Corporation;
- Yarra Valley Water; and
- Melbourne (aggregated figures determined from information reported by City West Water, South east Water and Yarra Valley Water).

These comparators have been adopted as they are all large distribution and retail water utilities; in each case bulk water supply services are provided by separate entities.

The adopted indicators are presented in **Table 5.57**. Figures for 2010/11 (latest published NWC Report) are presented for all comparators; QUU has also provided a copy of its input to the 2011/12 report.

All inputs used in compiling **Table 5.57** were subject to independent audit in 2010/11, which provides a degree of confidence in the figures. Whilst the NWC Report notes²⁰³ that the QUU (and Unitywater) figures exclude the cost of bulk water services, QUU has subsequently advised²⁰⁴ that this is not the case for its figures (although is for Unitywater's). Accepting QUU's position, an estimation of the resultant adjustments for Unitywater is shown (bracketed); this has been determined by adding in the bulk water costs as reported by Unitywater in its 2012/13 Interim Price Monitoring Information Return.

Movement in costs associated with QUU's operations from 2010/11 to 2011/12 (based on figures excluding bulk water costs, are shown in **Table 5.58**.

²⁰² Information sourced principally from: National Water Commission, *National Performance Report 2010-11; Urban water utilities; Part B – spreadsheet of all data reported*. Report available at: <http://archive.nwc.gov.au/library/topic/npr/nprs-2010-11-urban>

²⁰³ National Water Commission, *National Performance Report 2010-11; Urban water utilities; Part A – comparative analysis; Appendix A: Capital City Comparison*. Extract (page 117): “Note that data for Brisbane includes only the distribution and retail components of water services, unlike data for the other capital cities. The bulk utilities serving Brisbane (WaterSecure, Seqwater, LinkWater and the SEQ Water Grid Manager) also serve a much wider geographical area, and data was not able to be disaggregated for Brisbane for this report.”

²⁰⁴ QUU, *QUU Response to Revised Halcrow Report* (attachment to email dated 19 December 2012).

Table 5.57: QUU Operating Cost Benchmarks (Unit Costs) based on NWC Reported Information

Metric Type	Description	QUU		Unitywater	Sydney Water	Yarra Valley Water	Melbourne
		2010/11	2011/12	2010/11	2010/11	2010/11	2010/11
Customers	Total costs per connection	724	841	508 (752)	579	556	615
	Water costs per connection	482	582	307 (551)	323	286	323
	Wastewater costs per connection	242	259	201	256	270	292
Network	Total costs per km of pipeline	43,395	51,330	24,603 (36,580)	45,953	40,497	46,723
	Water costs per km of pipeline	29,563	36,196	15,085 (27,062)	27,488	21,096	24,428
	Wastewater costs per km of pipeline	13,832	15,134	9,518	18,465	19,401	22,295
Volume	Total costs per ML of drinking water	3,213	3,668	2,775 (4,153)	2,367	2,937	3,016
	Water costs per ML of drinking water	2,169	2,570	1,736 (3,114)	1,336	1,568	1,625
	Wastewater costs per ML of drinking water	1,044	1,098	1,040	1,031	1,369	1,391
	Wastewater costs per ML of wastewater	836	1,048	751	877	1,240	1,345

Note:

Unitywater figures reported under the NWC Reporting Framework exclude the cost bulk water. An estimation of these costs has been made using bulk water costs reported in the 2012/13 Interim Price Monitoring Information Return submitted by Unitywater; the impact is shown bracketed in each case where relevant.

Assessment of the information presented in Table 5.57 and Table 5.58 leads to the following observations:

- The movement in QUU's costs from 2010/11 to 2011/12 is predominantly driven by increases in the cost of providing water services. This is consistent with observations previously made. The unit cost per megalitre of wastewater also increase substantially, however, is not reflected in the unit cost to customers.
- QUU's unit cost to customers for both water services and in total are significantly greater than its interstate comparators, but less than Unitywater. The unit cost for wastewater services is, however, marginally lower than the comparators, with the exception of Unitywater.
- The total cost of operations on the basis of asset base (pipeline length) is comparable to its interstate comparators, although somewhat greater than for Unitywater. QUU's costs are much more heavily focused on the water supply network (as opposed to the wastewater network) than for its comparators.

- QUU's costs attributable to the supply of drinking water are significantly higher than its interstate comparators (but less than for Unitywater), again reflective of observations made previously in this report.

Table 5.58: QUU Operating Cost Benchmarks – Variance (based on NWC Reported Information)

Metric Type	Description	QUU		
		2010/11 (\$)	2011/12 (\$)	Variance
Customers	Total costs per connection	724	841	16%
	Water costs per connection	482	582	21%
	Wastewater costs per connection	242	259	7%
Network	Total costs per km of pipeline	43,395	51,330	18%
	Water costs per km of pipeline	29,563	36,196	22%
	Wastewater costs per km of pipeline	13,832	15,134	9%
Volume	Total costs per ML of drinking water	3,213	3,668	14%
	Water costs per ML of drinking water	2,169	2,570	19%
	Wastewater costs per ML of drinking water	1,044	1,098	5%
	Wastewater costs per ML of wastewater	836	1,048	25%

In order to provide a further comparison, Halcrow has undertaken an assessment of the adopted indicators for the years 2011/12 and 2012/13 for both QUU and Unitywater based on the information included in their 2012/13 Interim Price Monitoring Information Returns. Where the required information is not available in the Information Returns, this has been derived from annual reports or other sources; where updated data not available for 2012/13, 2011/12 data has been carried forward. This resulting analysis is presented in Table 5.59.

Assessment of the information presented in Table 5.59 leads to the following observations:

- Year on year movements in cost (from 2011/12 to 2012/13) for QUU are significantly in excess of general inflation forecast as indicated by CPI (expected to be in the order of 2.5 percent).
- Year on year movements in cost (from 2011/12 to 2012/13) for Unitywater are far less pronounced; where the impact of bulk water cost increases is excluded, they are generally less than (which indicates real reductions in cost), or of a similar order to forecast CPI.

Table 5.59: Comparative Assessment of QUU and Unitywater Operating Costs (based on Interim Price Monitoring Submissions)

Metric Type	Description	QUU (\$)			Unitywater (\$)			Entity Comparison (Unitywater/QUU)	
		2011/12	2012/13	Variance	2011/12	2012/13	Variance	2011/12	2012/13
Customers	Total costs per connection (incl bulk water)	878	1,001	14.1%	875	960	9.8%	-0.3%	-4.1%
	Total costs per connection (excl bulk water)	463	505	9.1%	541	548	1.2%	16.9%	8.4%
	Water costs per connection (incl bulk water)	590	703	19.1%	521	605	16.1%	-11.7%	-13.9%
	Water costs per connection (excl bulk water)	175	207	17.9%	187	192	2.5%	7.0%	-7.0%
	Wastewater costs per connection	288	299	3.8%	354	356	0.5%	22.9%	19.0%
Network	Total costs per km of pipeline (incl bulk water)	52,097	59,872	14.9%	42,369	46,796	10.4%	-18.7%	-21.8%
	Total costs per km of pipeline (excl bulk water)	26,723	29,504	10.4%	25,914	26,348	1.7%	-3.0%	-10.7%
	Water costs per km of pipeline (incl bulk water)	36,105	43,018	19.1%	25,705	29,972	16.6%	-28.8%	-30.3%
	Water costs per km of pipeline (excl bulk water)	10,730	12,650	17.9%	9,250	9,524	3.0%	-13.8%	-24.7%
	Wastewater costs per km of pipeline	15,993	16,854	5.4%	16,663	16,824	1.0%	4.2%	-0.2%
Volume	Total costs per ML of drinking water (incl bulk water)	3,685	4,091	11.0%	4,122	4,277	3.8%	11.9%	4.5%
	Total costs per ML of drinking water (excl bulk water)	1,902	2,028	6.7%	2,490	2,375	-4.6%	30.9%	17.1%
	Water costs per ML of drinking water (incl bulk water)	2,537	2,921	15.2%	2,549	2,787	9.4%	0.5%	-4.6%
	Water costs per ML of drinking water (excl bulk water)	754	859	13.9%	917	886	-3.4%	21.6%	3.1%
	Wastewater costs per ML of drinking water	1,148	1,169	1.9%	1,573	1,490	-5.3%	37.0%	27.4%
	Wastewater costs per ML of wastewater	1,108	1,168	5.4%	1,350	1,363	1.0%	21.8%	16.7%

Note:

- 1 Assessment based principally on data reported in the 2012/13 Interim Price Monitoring Information Returns submitted by QUU and Unitywater.
- 2 Where not otherwise available, data obtained from annual reports and other sources; 2011/12 data carried forward to 2012/13 where updated data not available.

- When assessed relative to the asset base (as represented by kilometres of water and wastewater pipeline), QUU's costs are significantly greater than those of Unitywater. This may in part be due to the density of QUU's customer base, although (as discussed in **Section 5.2.5**) Unitywater has higher numbers of infrastructure for unit service delivery than QUU.
- QUU's costs for the provision of wastewater services are less than those of Unitywater when cost per connection is considered; conversely, however, its costs for the provision of water (excluding bulk water costs) per connection are greater than for Unitywater.

5.6 Summary Assessment of Operating Costs

5.6.1 Overview

QUU's regulated operating expenditure (excluding bulk water) increases (+10.3 percent) at a significantly greater rate than the assumed change in the CPI in 2012/13.

This results from a range of factors including:

- Escalation rates for some expenditure items increasing at a greater than the change in the CPI (eg. employee salaries at 4.25 percent).
- Large expenditures are being incurred as a result of the separation from Brisbane City Council.
- Enhancements to current processes and programs (eg. greater emphasis on proactive maintenance).
- Government imposed charges (eg. land tax of \$2.3 million) and need to comply with government legislation (eg. identification of which customers are pensioners for payment of refunds).

It should, however, be noted that:

- While made necessary by the actions of Council, the separation process has not gone smoothly and the current rushed program may have imposed unnecessary costs.
- To the extent they remain, the costs of Council provided services have increased at a significantly greater rate than the general movement in prices.
- In the transition process, some activities (eg. payroll) are being duplicated as the service provider changes.
- Water purchases are inflated by the level of non revenue water. This is, in part, a legacy issue for QUU because of the large variation in outcomes across the constituent council areas.
- QUU's attention was diverted, out of necessity, by the 2011 flood which delayed work required as part of the transition to the new entity. The flood also caused additional expenditure and reduced QUU's capacity to generate some of its own electricity in 2012/13.

- QUU's costing systems, as reflected in its reports to the QCA, fall short of best practice for allocating costs between products and regions.
- There remain some opportunities identified by the Third Horizons efficiency study which are still being/yet to be investigated (and implemented as appropriate).
- QUU's costs remain much higher than its inter-state comparators, although they are inflated in part by the transition/separation program.

5.6.2 Efficiency Gains/New Initiatives

QUU has identified a number of new initiatives and opportunities for efficiency gains that it either plans to or has already commenced to implement. A review of the listing of new initiatives reveals the proposed actions to be generally appropriate for QUU as it transitions into its new organisational regime.

Whilst some of these initiatives will lead to improved efficiencies (eg. a move to a more optimal balance of planned and reactive maintenance is a recognised efficiency improvement), others will result in improved levels of service or regulatory compliance (eg. the sewerage overflow management program) albeit at some increase in operational cost.

Halcrow notes that it has not seen fully detailed evidence of the cost benefit offsets provided by the identified new initiatives and efficiency offsets. It does, however, note that QUU's 2012/13 budget is some \$13 million in excess of that identified in its Corporate Plan; the explanation for this variance is the increase in planned maintenance and the fact that the separation from Brisbane City Council was misunderstood and not bedded down.

Halcrow is of the view that some 40 percent of the expenditure identified by QUU as 'new initiatives' would more appropriately be identified as 'business as usual' expenses, which has the impact of increasing the base level of operating expenditure. This in turn impacts on the assessment as to whether QUU has/is forecast to achieve the efficiency targets set by the QCA.

An assessment of QUU's actual (2011/12) and forecast (2012/13) efficiency achievement reveals that, once the identification (re-classification) of additional 'business of usual' expenditure is taken into account, it fails to meet its 2 percent per annum efficiency targets in either 2011/12 or 2012/13 based on the figures reported in its Interim Price Monitoring Information Return. If actual expenditure incurred in 2011/12 is considered, the target is again not achieved.

5.6.3 Cost Allocation

Halcrow considers QUU's policies for cost allocations are consistent with the information requirements.

The basis for allocation of indirect and common costs could be refined further but with no clear benefits over the cost incurred. It is not considered that such refinements would materially affect the assessment of the efficiency and prudence of QUU's expenditure.

However, in practice there are a number of exceptions where QUU does not meet QCA's information requirements and where there are questions over its application of its cost allocation policies.

Halcrow's analysis of operating expenditure at both aggregate and detailed levels has identified likely issues in respect of cost allocations. Unexplained disparities in year-on-year movements in costs by region and product indicate that the approach currently adopted by QUU needs further improvement. QUU has indicated that it has taken action to improve its approach to allocation, however, acknowledges that there is further improvement to be made.

Adoption of a more robust approach to cost allocation will lead to a better understanding of the actual cost of providing services by both service and region, thereby enabling a true reflection in the prices levied.

5.6.4 Employee Expenses

A significant increase in employee expenses is being driven both by the real increases in labour cost and the number of FTE employees (either direct or under contract) currently engaged by QUU. The forward estimates for employee expenses for 2013/14 and 2014/15 show further increases. They do not appear to reflect the sharp fall-off in expenditure that could be expected with the completion of the current transition projects and introduction of new systems. Whilst expenditure in 2012/13 is substantially justified, there is likely to be opportunity for downward adjustment in future years.

5.7 Recommended Operating Expenditure

Given the manner in which the costs are reported, specifically with identified Corporate costs effectively duplicating costs reported against other categories, it is difficult to make a clear assessment of the inefficiencies incorporated into QUU's forecast operating expenditure for 2012/13. Notwithstanding, the following adjustments are proposed in respect of expenditure categories considered:

- *Employee Expenses:*

On the basis of the analysis outlined in **Section 5.3.2**, Halcrow is of the view that the efficient level of employee expenses is in the order of 5-10 percent less than forecast. Accordingly, a reduction of \$4.84 million (5 percent) is proposed.

- *Electricity:*

On the basis of the analysis outlined in **Section 5.3.3**, no adjustments are proposed to the forecast electricity expenses.

- *Corporate Expenses:*

Halcrow's analysis of QUU's Corporate Costs (refer **Section 5.3.4**) concludes that a reduction of \$4.0 million is warranted to reflect efficient costs. This should be adjusted to allow for reductions in employee expenses already accounted above; given that these represent approximately 26 percent of corporate costs, a net adjustment of \$2.95 million is proposed.

- *Other Materials and Services:*

Whilst Halcrow acknowledges the reasoning (justification) for the majority of other materials and services expenditure (refer **Section 5.3.5**), it has reservations as to the quantum of the increased allowance for contractor involvement in its Planned Maintenance Program. Indicative analysis indicates that the additional \$10.82 million expenditure to be incurred for contractors engaged for this purpose would equate to an additional 54FTE equivalent (assume \$100,000 per FTE and equivalent cost in material, plant hire, etc.). In the absence of a detailed analysis, Halcrow proposes that a more likely scenario may be that five (5) four (4) person maintenance crews may be engaged under contract. At a total annual cost in the order of \$4.0 million (twenty persons @ \$100,000 plus equal allowance for material and plant costs), this would result in a net reduction of \$6.82 million from the forecast allowance.

In total, Halcrow proposes that a reduction of some \$14.61 million in QUU's forecast of \$265.36 million is required to reflect an efficient level of regulated operating expenditure for 2012/13. This represents a reduction in the order of 5.5 percent.

6 Capital Expenditure

6.1 Overview

Queensland Urban Utilities (QUU) has reported actual and forecast capital expenditure of \$1,695.94 million (\$nominal) over the five (5) year period from 2010/11 to 2014/15 with \$354.24 million (\$nominal) forecast in 2012/13, as shown in Table 6.1. Of the 2012/13 forecast, \$55.60 million relates to donated/gifted assets, leaving expenditure of \$298.64 million to be incurred directly by QUU.

Table 6.1: Actual and Forecast Capital Expenditure (\$'000 nominal)

Expenditure	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
Total Capital Expenditure	157,745	216,224	354,240	516,382	451,349	1,695,939
Value of Donated/Gifted Assets	55,498	52,865	55,604	60,393	63,192	287,551
QUU Capital Expenditure	102,247	163,359	298,636	455,989	388,157	1,408,388

Total capital expenditure is increasing steadily over the reported period, although shows a reduction in 2014/15.

A breakdown of the total expenditure by region and service is shown in Table 6.2 and Table 6.3 respectively. More detailed assessment reveals that:

- approximately 63 percent of total capital expenditure over the five (5) year period is incurred in the Brisbane region, with a further 27 percent in the Ipswich region; the proportion of capital expenditure in the remaining regions varies up to a maximum of almost 6 percent;
- the allocation of expenditure by region is more focussed in the Brisbane region in 2012/13, with 73 percent of total forecast for that region; the proportion allocated to Ipswich in 2012/13 is slightly less than the five year average at 20 percent whilst the remaining regions each receive 2-3 percent;
- the majority (66 percent) of expenditure over the five (5) year reporting period is incurred in respect of sewerage assets; water supply assets account for a further 25 percent, with the remaining 9 percent attributable to trade waste services;
- there is a slightly greater focus on water services in 2012/13 with an increase to 29 percent of the total capital expenditure; this is offset by a reduction in expenditure proportioned to sewerage assets (62 percent), whilst the proportion of expenditure on trade waste services remains essentially consistent with the five year average.

Table 6.2: Actual and Forecast Capital Expenditure by Region (\$'000 nominal)

Expenditure	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
Brisbane	115,864.5	158,413.5	256,923.4	210,728.8	320,380.3	1,062,310.5
Ipswich	37,956.7	33,915.9	69,004.7	269,256.6	40,682.5	450,816.5
Lockyer Valley	1,148.9	4,537.3	11,126.8	8,865.3	8,124.6	33,802.8
Scenic Rim	1,442.1	15,056.1	10,181.4	22,210.4	3,777.3	52,667.3
Somerset	1,332.4	4,301.2	7,003.7	5,320.8	78,384.3	96,342.4
Total capital expenditure	157,744.6	216,224.0	354,240.0	516,381.9	451,349.0	1,695,939.5

Table 6.3: Actual and Forecast Capital Expenditure by Service (\$'000 nominal)

Expenditure	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
Water	60,183.6	78,999.9	104,205.7	92,074.4	89,912.7	425,376.3
Wastewater	84,958.7	120,812.6	218,383.7	379,876.6	322,461.6	1,126,493.3
Trade Waste	12,602.2	16,411.4	31,650.7	44,430.8	38,974.7	144,069.9
Non-Regulated	0.0	0.0	0.0	0.0	0.0	0.0
Total capital expenditure	157,744.6	216,224.0	354,240.0	516,381.9	451,349.0	1,695,939.5

Whilst a range of drivers of expenditure have been identified by QUU, the primary drivers of capital expenditure include:

- Growth – which relates principally to the creation of new assets, or augmentation of existing assets to provide increased capacity;
- Renewal – which relates to the renewal (either by rehabilitation or replacement) of existing assets that have deteriorated, failed or otherwise reached (or are nearing) the end of their useful lives;
- Improvements – which relates to the enhancement of asset performance through the implementation of appropriate technological improvements; and
- Compliance – which relates to expenditure incurred in order to meet statutory requirements in respect of issues such as environmental impact, and occupational health and safety.

The allocation of capital expenditure incurred in relation to each of these primary drivers is shown in Table 6.4, which also shows the value of donated/gifted assets. Halcrow anticipates that the majority of donated assets would be aligned to the growth driver.

Table 6.4: Actual and Forecast Capital Expenditure by Primary Driver (\$'000 nominal)

Expenditure	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
Growth	4,681.0	32,388.1	103,380.7	274,753.6	202,153.3	617,356.8
Renewal	83,741.4	104,586.6	142,628.1	142,672.0	146,034.5	619,662.5
Improvement	9,256.4	14,102.1	39,850.9	33,799.9	35,573.7	132,583.0
Compliance	4,568.1	12,282.6	12,776.4	4,763.6	4,395.2	38,785.8
Contributed assets	55,497.7	52,864.6	55,604.0	60,392.8	63,192.4	287,551.4
Total capital expenditure	157,744.6	216,224.0	354,240.0	516,381.9	451,349.0	1,695,939.5

Assessment of the figures presented in Table 6.4 reveals that:

- expenditure over the five (5) year reported period is principally driven by Growth and Renewals, in approximately equal proportions; some 17 percent of total expenditure is realised through Contributed (donated/gifted) Assets;
- the mix of drivers is substantially different in 2012/13 when Growth accounts for only 3 percent, Renewals 53 percent and Contributed Assets a significant 35 percent; and
- there is a clear shift towards Growth over the five year period, with reductions in the proportion of expenditure driven by Renewals and realisation of Contributed Assets.

These trends are reflected in Table 6.5.

Table 6.5: Proportion of Capital Expenditure by Primary Driver

Expenditure	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
Growth	3.0%	15.0%	29.2%	53.2%	44.8%	36.4%
Renewal	53.1%	48.4%	40.3%	27.6%	32.4%	36.5%
Improvement	5.9%	6.5%	11.2%	6.5%	7.9%	7.8%
Compliance	2.9%	5.7%	3.6%	0.9%	1.0%	2.3%
Contributed assets	35.2%	24.4%	15.7%	11.7%	14.0%	17.0%
Total capital expenditure	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Other (secondary) drivers relate to the requirement for QUU to meet service performance requirements in an efficient manner. Accordingly, these include:

- Service reliability;
- System (service) performance; and
- Economic benefit (efficiency).

These are applicable to each of the primary drivers identified by the QCA.

6.2 Review of Capital Projects

As part of the review of QUU's proposed capital expenditure, Halcrow undertook a detailed examination of a representative sample comprising of ten (10) projects which are forecast to incur expenditure during the 2012/13 financial year. The projects selected for detailed review are as listed in **Table 6.6**.

The sample projects were selected (initially by the QCA) on the basis of project value and whether or not the projects had been previously been reviewed as part of the ongoing price monitoring process. Halcrow accepted the QCA's proposed selection (and its basis) noting that the selection included a number of ongoing programs of capital works in addition to four (4) specific projects.

When compared to QUU's capital program, the selected projects represent approximately 15 percent of the 2012/13 program in terms of capital value, which is significantly above the 10 percent threshold requested and 7 percent of the program of the five (5) year reported period.

Table 6.6: Capital Projects Selected for Detailed Review

Project Name	QUU Project ID	Geographic Area	2012/13 Expenditure (\$'000s nominal)
Brisbane Water Reservoirs Renewals Program	BDWDAA04	Brisbane	4,653
Brisbane Water Meters Renewals Program	BDWDAA06	Brisbane	5,607
Brisbane Sewer Rising Mains Renewals Program	BWWCAA03	Brisbane	7,218
Brisbane Sewer Pump Stations Renewals Program	BWWCAA06	Brisbane	4,119
Brisbane Sewer Pump Station Reliability Improvement Program	BWWCAA08	Brisbane	4,198
Brisbane Water Reclamation Plant Renewals Program	BWWTAA01	Brisbane	4,408
Brisbane Gibson Island WRP - Sludge Dewatering Enhancement	BWWTAA28	Brisbane	2,970
Brisbane Oxley Creek WRP - Primary Digesters Environmental Improvements	BWWTAA47	Brisbane	3,490
Ipswich Deebling Creek Sewer Trunk Main Augmentation – Stage 1	IWWCAA30	Ipswich	1,000
Ipswich Rosewood WRP Upgrade - Stage 2a	IWWTAA23	Ipswich	3,664

In undertaking the detailed reviews of the above projects, Halcrow has sought to:

- identify the need for the project;
- identify the key drivers for investment;
- understand the approach to solution development adopted; and identify the alternative options considered and the basis for the preferred solution;
- understand the proposed method of procurement and delivery profile of the project;
- understand the basis of the cost build-up and whether any contingencies or allowances have been applied to capital expenditure forecasts;
- identify the proposed outputs of each project;
- understand the implications of the project in respect of operating expenditure; and
- assess the prudence and cost effectiveness of each project.

6.3 Detailed Investigations

6.3.1 General

The findings of the detailed investigations for each of the projects reviewed are summarised in the following sections. More detailed discussion in respect of each project is presented in **Appendix A**.

6.3.2 BDWDAA04 - Brisbane Water Reservoirs Renewals Program

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

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

- BDWDAA04A04 Tarragandi Reservoir Roof Project;
- BDWDAA04A08 Tarragandi Water Reservoir Floor Joints, Columns & Valve Towers Repairs; and
- BDWDAA04A05 Rehabilitation of Manly Elevated Steel Tank.

Halcrow's assessment has found the Tarragandi Reservoir projects to be prudent and the approach to delivery (as separate projects) appropriate. Whilst the direct (contract) costs of undertaking the work are considered to be efficient, Halcrow is of the view that some contingency and on-cost allowances are excessive, particularly given the nature of the works.

More specifically, a contingency allowance of 26.5 percent for the roofing project is deemed excessive given that the nature of the work is relatively well defined.

Furthermore, the 25 percent (total) allowance for design costs, design management, project management and contract management are considered excessive on projects that will involve minimal design input. These allowances appear, however, to have been reduced to a more appropriate level at the post-market review stage.

Whilst the Tarragandi Reservoir Floor Joints, Columns & Valve Towers Repairs project has been assessed, it is noted that expenditure in respect of this project is to be fully expensed. On the basis that the work comprises repair works that will not materially extend the life of the asset, Halcrow supports this approach.

Halcrow is concerned that it has seen no evidence of the assessment of appropriate options in respect of the rehabilitation of the Manly Elevated Steel Tank, which is understood to be no longer required for water supply purposes. Whilst its heritage status is acknowledged, options including decommissioning and replacement should have been considered along with the adopted rehabilitation. Furthermore, any works should be limited to meeting obligations in respect of heritage assets, which Halcrow anticipates would comprise maintaining the ongoing safety of the structure. Accordingly, a nominal reduction 50 percent reduction in the expenditure allowance is proposed; on the basis of the high level description of the scope of the works, this adjustment makes allowance for the cost of internal repair works which are more likely to be required to retain the structure in operational service.

6.3.3 BDWDAA06 - Brisbane Water Meters Renewals Program

The Brisbane Water Meters Renewals Program comprises a rolling program of mechanical testing and refurbishments, implemented in order to maintain operational performance of domestic and non-domestic meters used for billing purposes. An Asset Management Plan established the need to accelerate the number of meter replacements between 2007-08 and 2012-13 in order to minimise risk of meter failure and to keep pace with meter degradation over time. The greatest need was found to be replacement of 20mm meters installed in Brisbane in the early 1990s.

QUU has developed a decision tree which provides a pragmatic approach to prioritising meter replacement whilst maximising meter life. The highest priority for replacement is given to meters with the highest potential for loss of revenue to QUU. Priority is also given to meters that have stopped (zero read meters), excess kilolitre based replacement (total flow registered) or age based replacement.

Ongoing renewal of water meters is considered prudent, on the basis that statistics indicate that the meters are likely to be at fault. It would, however, be prudent for QUU to analyse real data associated with lost revenue prior to bringing forward the \$2 million of expenditure allocated for 2013/14, as proposed, to relieve backlogged work. Any expenditure advancement should be justified on the basis of cost savings and maintenance savings over the longer term.

Halcrow also has concerns in respect of the current arrangements which involve sourcing multiple meter types based on what is cheapest on the market at the time. Given there is a preference for two (2) small meter types (of the five (5) types currently in operation), there may be an opportunity to formalise the preference for two or three proven meter types (and a range of test meters) through the negotiation of formal bulk supply contracts. This would drive cost savings from a supply perspective, and lead to the achievement of further efficiencies.

Halcrow also notes that forecast expenditure for this program is based on early estimates of the cost of meter replacement as opposed to actual contract rates, which are some 12 percent lower. Accordingly, a reduction in the forecast allowance for 2012/13 (\$314,000) and subsequent years is recommended.

6.3.4 BWWCAA03 - Brisbane Sewer Rising Mains Renewals Program

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

The program is separated between two asset classes, including:

- 'Run to Fail' assets - rising mains with a diameter \leq 300mm; and
- 'Avoid Fail' assets - rising mains with a diameter $>$ 300mm.

QUU proposes to deliver six separate schemes under this program in 2012/13, including three schemes on 'run to fail' assets and three schemes on 'avoid fail' assets.

Solutions for the 'run to fail' schemes generally involve the 'like for like' replacement of the failure prone rising main. Selection is based primarily on historic performance and failure history of that particular rising main. In order to develop a viable solution for the 'avoid fail' schemes, which are generally a proactive response to visual and UT inspections, a feasibility report is prepared, whereby a number of options are considered.

Halcrow found that the costs were generally based on generic unit rates and an estimated bill of quantities. For the larger 'avoid fail' schemes, estimated construction costs were either based on actual industry estimates acquired as part of feasibility, or based on similar work completed by QUU. Estimated costs have also been adjusted to allow for various QUU management costs; Halcrow found the percentage adjustments to be consistent with standard engineering practice.

QUU has also applied a variable percentage construction contingency adjustment to each of the six schemes, ranging from 23 percent to 40 percent. Whilst it is usual practice to include for contingency within construction estimates, Halcrow considers the assumed contingency allowance (\$1.05 million for 2012/13) to be overstated. This particularly applies to schemes where the proposed scope is reasonably well defined and forecast to be delivered using established techniques. As the projects within this program are forecast to be predominantly delivered during the current year, there

should already be a reasonable level of project definition, suggesting a contingency allowance of 10-15 percent would be more appropriate.

Based on the recorded failure history of the proposed 'run to fail' schemes and assessed condition of the rising mains included in the 'avoid fail' schemes, Halcrow considers the projects identified for implementation under the program to be both necessary and prudent.

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

Whilst the cost estimates used to derive the scheme expenditure forecasts are detailed and relatively accurate for feasibility purposes, Halcrow considers the overall contingency allowance to be quite high and as a result, efficiencies may be achieved during the procurement and delivery of the program. This particularly applies to the more routine 'run to fail' schemes where the scope is already well defined.

In recognition of these expected efficiencies, Halcrow recommends an adjustment to the 2012/13 expenditure forecast reflective of adjusting the contingency allowance to a maximum of 10 percent on the 'run to fail' schemes and 25 percent on the 'avoid fail' schemes (15 percent on RM10). On this basis, the forecast expenditure in 2012/13 should be reduced by circa \$345,000. Whilst QUU argues that the "*level of contingency for each project reflects the level of project and scope risk associated with each of the projects*" and has provided some justification for the allowances applied, Halcrow considers that the suggested revised contingency allowance, along with the 'swings and roundabouts' achieved in overall program delivery, should ensure sufficient contingency is provided to deliver the identified schemes.

6.3.5 BWWCAA06 - Brisbane Sewer Pump Stations Renewals Program

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

The SPS renewals program defined for 2012/13 predominantly involves the 'like for like' replacement of mechanical and electrical (M&E) equipment that has either failed or is reaching the end of its design life.

Estimated costs for each of the eleven (11) schemes have been systematically built up using a 'Minor Capital Project Submission Costing Sheet'. Halcrow found that the costs were generally based on generic unit rates (using QUU day rates) and an estimated bill of quantities. For larger items, such as pumps, variable speed drives and pipes, budget cost estimates have been provided by relevant suppliers. Estimated costs have also been adjusted to allow for various QUU management costs, and Halcrow found the percentage adjustments to be consistent with standard engineering practice. Halcrow

also notes that all cost estimates used to build up the estimated cost of this program are based on the assumption that work will be delivered by QUU day labour.

QUU has applied a variable percentage construction contingency adjustment to each of the eleven (11) schemes, ranging from 20 percent to 55 percent. Whilst it is usual practice to include for contingency within project estimates, Halcrow queries the necessity to make such large provision for variance in what are routine renewals schemes, where the proposed scope and delivery method should be reasonably well defined, given the projects are forecast for delivery during the current year.

In response to Halcrow's observations, QUU provided additional explanation to justify the contingency applied to each project. Whilst, the specific issues identified by QUU do reflect potential risks to delivery, the schemes are forecast for delivery during the current year and will need to be procured shortly. On this basis, Halcrow would normally expect the risks (as identified by QUU in their response) to already be incorporated into the project design/estimate, thereby reducing the need for a large contingency allowance. By not accounting for these known risks within the project design/estimate prior to procurement, QUU is increasing uncertainty and reducing the opportunity to deliver efficiencies through the procurement process.

QUU has adopted a systematic approach to the development of individual projects, based on condition monitoring (for 'avoid fail' assets) and asset performance (for 'run to fail' assets). Whilst the overall program appears to have been developed on an ad-hoc basis, based on individual business cases, Halcrow understands that actual measured asset condition and performance is used as a trigger to progress each business case. Notwithstanding this, for a routine but necessary program of this nature, Halcrow would expect to see evidence of a more holistic approach to program development and delivery that would enable QUU to better define the work in advance of delivery and also explore different delivery methods which would assist in improving the efficiency of delivery.

Whilst the cost estimates used to derive the program value are detailed and appear to be relatively accurate for feasibility purposes, Halcrow considers the overall contingency allowance to be quite high and as a result, efficiencies may be achieved during the procurement and delivery of the program. Furthermore, costs appear to have been developed using QUU day labour rates, which again limits the scope to improve efficiency of delivery.

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

6.3.6 BWWCAA08 - Brisbane Sewer Pump Station Reliability Improvement Program

The Sewer Pump Station (SPS) Reliability Improvement Program is an ongoing, rolling program to rehabilitate and enhance the automatic control and telemetry assets across QUU's network of 199 SPS. The program is driven by the Brisbane Water target (carried on by QUU) of zero tolerance to dry weather overflows from SPS due to telemetry/mechanical failure. As a result of a major dry weather overflow incident which occurred 2005 due to multiple probe system failure, QUU has committed to deliver, on a prioritised basis (relating to 'time to overflow'), improvements to each SPS within the QUU network.

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

The forecast expenditure for the 2012/13 program was based on average historic costs achieved in the delivery of this rolling program over the previous five years.

A proactive approach to SPS upgrades in order to guarantee SPS reliability ensures that QUU will maintain compliance with all regulatory obligations associated with SPS operation and performance. However, Halcrow's review of this ongoing program of work identified that this major commitment appears to have been based on a single service failure at Heroes Avenue (SPS103) Pumping Station that occurred in 2005.

The ongoing delivery of this rolling program demonstrates that QUU has a very low appetite for risk, in terms of both regulatory and reputational risk. Whilst total protection against asset failure is an aspirational target within a water business, and it is recognised that this program is a legacy issue reflecting a commitment made by a predecessor organisation prior to the formation of QUU, Halcrow does not believe it is prudent to systematically replace mechanical and electrical equipment on the basis of age and type, with limited regard to measured asset performance. Comprehensive replacement, regardless of performance, does not provide good value for money to its customer base. Halcrow believes that a more balanced approach should be considered, striking a balance between asset performance and cost. On this basis, it may be more prudent for QUU to maintain a regular monitoring and maintenance regime of its SPS network and proactively replace assets when the level of deterioration is demonstrable.

Furthermore, Halcrow does not consider QUU's current approach to program delivery to be efficient. Whilst the separate procurement of relatively small, design, supply and construct packages enables QUU to maintain control over delivery of the program and ensure delivery by specialist contractors, it is not conducive to driving efficiencies into the project delivery process. Halcrow considers that a long term, reasonably well defined program of renewals would normally lend itself to a separately tendered, long term framework contract that would potentially introduce economies of scale through reduced procurement costs and lower unit costs due to the surety of work. QUU advised that D&C delivery mechanisms have previously been unsuccessfully used to deliver this program (hence the current approach), however, they are currently

“reviewing and revising its procurement and packaging arrangement to achieve improved efficiencies with regard to this project”, which may deliver the potential benefits, as highlighted above.

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

Notwithstanding, a reduction in future expenditure to reflect expected efficiencies would be expected; accordingly, Halcrow recommends a nominal adjustment to the 2012/13 expenditure forecast of 5 percent to encourage the consideration of a different procurement strategy. On this basis, the forecast expenditure in 2012/13 should be reduced by circa \$210,000.

Halcrow also considers that an adjustment should be made to reflect the imprudent element of the work that has been undertaken and proposes a further nominal 5 percent (\$210,000) adjustment to reflect the proportion of expenditure that is considered imprudent.

6.3.7 **BWWTAA01 - Brisbane Water Reclamation Plant Renewals Program**

The Brisbane Water Reclamation Plant Renewals Program comprises an ongoing program of asset renewal at QUU's twenty eight (28) water reclamation plants. The age of assets at the plants range from 1 to 45 years. Most civil assets are still within their anticipated useful life, whereas a significant proportion of mechanical and electrical assets have exceeded their useful asset lives and are 25 to 40 years old. Obsolescence is an issue for the older mechanical and electrical equipment.

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

Halcrow has reviewed three (3) of the projects in more detail; these include:

- BWWTAA01A26 Brisbane Luggage Point WRP Effluent Switchboard (Electrical Reticulation);
- BWWTAA01A41 Brisbane Luggage Point WRP Digester Roof Rehabilitation; and
- BWWTAA01A75 Brisbane Rocks Riverside Septic Tank and Wet Well Rehabilitation.

On the basis of these reviews, it is clear that there is a need for renewal of these assets. QUU has also demonstrated prudence in project selection, and in delaying renewals where future upgrades are planned. There is, however, little evidence to suggest that cost efficiency is being achieved for the three sample projects.

The Luggage Point WRP Effluent Switchboard project was originally assumed to be packaged with two other similar projects. One of the projects was subsequently abandoned/deferred, however, an adjustment to contingency and on-costs commensurate to the reduced scope of work was not recognised.

Halcrow is of the view that there is some scope for a cost reduction based on 'economies of scale' in respect of the Luggage Point WRP Digester Roof Rehabilitation project which involves the rehabilitation of two digester roofs. The estimated cost is based on the historical cost of a single roof rehabilitation, with no adjustment for savings in respect of site preliminaries and management (which are related to project establishment and duration).

Halcrow also notes that allowances for contingency in respect of the Brisbane Rocks Riverside Septic Tank and Wet Well Rehabilitation project appear to have been 'doubled-up', with allowances included in both the independent construction estimate and the further estimate by QUU.

On the basis of these observations, Halcrow recommends a reduction in the forecast expenditure for 2012/13. The amount for deduction has been calculated to reflect the redundant scope, expected efficiency and excess contingency having been factored into the reviewed projects. A further global 5 percent (minimum) reduction has been applied to the remainder of the project on the basis of the savings identified in respect of the sample of projects reviewed; this has also been applied to forecast expenditure in forward years. The net reduction in 2012/13 amounts to \$360,000.

6.3.8 **BWWTAA28 - Brisbane Gibson Island WRP – Sludge Dewatering Enhancement**

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

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

The project involves the 'like for like' replacement of existing BFPs with three (3) new BFPs and associated auxiliary equipment.

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

Halcrow also considers the procurement strategy to be appropriate for a risk adverse organisation like QUU. The adopted approach to procurement (under the Collaborative Delivery Initiative) provides QUU with an element of control without the overall responsibility for delivery. Whilst it does not guarantee the lowest cost option, the open book assessment approach provides an arrangement under which QUU is able to negotiate scope and cost of individual elements, thereby ensuring that it is delivered with an asset that the organisation is comfortable with, whilst reducing the overall whole of life cost of the asset through reduced operating costs.

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

On the basis of the assessment outlined above, no change to QUU's 2012/13 expenditure forecast is proposed.

6.3.9 **BWWTAA47 - Brisbane Oxley Creek WRP – Primary Digesters Environmental Improvements**

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

Additional capacity is now required and upgrade of both Digesters 3 and 4 is proposed so that redundancy is also provided. The proposed upgrades are to be reflective of the work previously undertaken in respect of Digesters 1 and 2; the adopted solution was subject to a detailed assessment of options (which also addressed Digester 3 and 4) undertaken in 2005.

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

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

6.3.10 **IWWCAA30 - Ipswich Deebling Creek Sewer Trunk Main Augmentation - Stage 1**

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

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

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

Halcrow also considers the procurement strategy to be appropriate; the flexibility to accept the submission of non-compliant but appropriate solutions ensured that a best value, low cost option was delivered. Halcrow's review highlighted the fact that post tender negotiation with the preferred contractor further reduced the contract price, thereby improving the cost effectiveness of the scheme. In addition, QUU has undertaken a Net Present Value analysis which accounted for whole of life costs, and the final solution, which involves the abandonment of an existing pumping station, will further reduce the annual operating costs to the catchment, thereby ensuring that the solution is both efficient and cost effective.

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

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

On the basis of the assessment outlined above, no change to QUU's 2012/13 expenditure forecast is proposed.

6.3.11 IWWTAA23 - Ipswich Rosewood WRP Upgrade - Stage 2a

This project, which is being undertaken in response to growth in the catchment, involves the implementation of upgrades to the Rosewood Sewage Treatment plant (STP) such that it operates effectively up to its current licensed capacity of 4,000EP. The proposed upgrades comprise a range of initiatives to improve process performance and control of the existing facility.

It appears that there was some difficulty in appropriately scoping this project from when studies related to this project first began at Ipswich City Council in around 2007.

By revising design capacity and delaying upgrade until approximately 2017, QUU has shown prudence in attempting to delay expenditure of more than \$20 million for the cost of a new STP. The difficulty, however, has been in striking the right balance so that upgrades to the existing STP may be incorporated into any future plant. It is not clear how the 2012 upgrade will interface with any future plant and this decision does not appear to have been factored into the enhancement of the existing plant such that it was capable of meeting a 4,000EP load.

The adopted solution was put to market tender in November 2011 and a contract for implementation of the works subsequently awarded. Whilst originally planned for delivery on a design and construct basis, the awarded contract was for construction only with a design consultant separately engaged.

It is noted that the contract cost amounted to approximately \$3.73 million, with identified risks priced by the contractor amounting to an addition contingency of \$1.2 million; the total cost post-market amounted to \$5.47 million. Increased scope related to de-sludging and rehabilitating lagoons has resulted in claimed additional expenditure of \$1.18 million.

A revised project budget, which increases the estimated total cost to \$6.67 million, was developed and subsequently approved. This amount includes an allowance of \$1.67 million for further variations that have not yet been approved; internal management and support costs have, however, been substantially reduced.

Overall, some \$2,865,626 of additional works, which equates to 76 percent of the initial construction contract value of \$3,734,375, has been identified. QUU has, however, documented and justified the risk driven additional scope incurred in undertaking the project.

Halcrow does, however, recommend a reduction of \$473,561 in forecast expenditure for 2012/13 to reflect the decrease in spending associated with project contingency and internal management and operational support costs. It is also recommended that an adjustment to the 2013/14 forecast is made to reflect the required increase in expenditure of \$1,671,034 for necessary additional works.

6.3.12 Summary

On the basis of the detailed review undertaken in respect of the ten (10) identified projects, Halcrow has recommended that the allowed 2012/13 expenditure in respect of seven (7) projects be reduced, including:

- one (1) project for which a sub-project is not considered to be prudent;
- one (1) project for which the actual contracted unit rates are less than the rates adopted for forward budgeting purposes;
- two (2) projects for which contingency allowances have been considered excessive;
- one (1) project for which adopted procurement processes are considered to be inefficient, and for which some elements of the work are considered imprudent;

- one (1) project for which sub-projects have been found to include redundant scope, present potential efficiency gains and include excessive contingency allowance; a further global reduction has been applied to other sub-projects; and
- one (1) project for which a reduced amount of expenditure will be incurred during 2012/13; an increase in expenditure in 2013/14 is proposed to reflect additional justified scope of work.

Halcrow's assessment in respect of each sample project is summarised in **Table 6.7**.

Details of the proposed adjustments over the reported period as are presented in **Appendix B** (refer **Table B.1**).

Table 6.7: Summary of Assessment of Sample Projects

Project Name	QUU Project ID	Assessment			2012/13 Expenditure (\$'000 nominal)		
		Prudent	Efficient	Comment	QUU Proposed	Adjustment	Halcrow Recommended
Brisbane Water Reservoirs Renewals Program	BDWDAA04	✗	✗	One sub-project not considered prudent; Reduction to reflect unjustified expenditure.	4,653	-651	4,002
Brisbane Water Meters Renewals Program	BDWDAA06	✓	✗	Reduction to reflect actual (as opposed to budgeted) unit rates.	5,607	-314	5,293
Brisbane Sewer Rising Mains Renewals Program	BWWCAA03	✓	✗	Project considered prudent, but not efficient; Reduction to reflect excessive contingency allowance.	7,218	-345	6,873
Brisbane Sewer Pump Stations Renewals Program	BWWCAA06	✓	✗	Project considered prudent, but not efficient; Reduction to reflect excessive contingency allowance.	4,119	-305	3,814
Brisbane Sewer Pump Station Reliability Improvement Program	BWWCAA08	✗	✗	Project not considered prudent or efficient; Reduction to reflect inefficient procurement process and elements of work considered imprudent.	4,198	-420	3,778
Brisbane Water Reclamation Plant Renewals Program	BWWTAA01	✓	✗	Reduction to reflect identified redundant scope, potential efficiency gain and excess contingency on specific sub-projects; Further global reduction based on basis of identified issues.	4,408	-360	4,048
Brisbane Gibson Island WRP - Sludge Dewatering Enhancement	BWWTAA28	✓	✓	Project considered prudent and efficient; No adjustment required.	2,970	-	2,970
Brisbane Oxley Creek WRP - Primary Digesters Environmental Improvements	BWWTAA47	✓	✓	Project considered prudent and efficient; No adjustment required.	3,490	-	3,490
Ipswich Deebling Creek Sewer Trunk Main Augmentation – Stage 1	IWWCAA30	✓	✓	Project considered prudent and efficient; No adjustment required.	1,000	-	1,000
Ipswich Rosewood WRP Upgrade - Stage 2a	IWWTAA23	✓	✗	Reduction to reflect decreased expenditure in 2012/13; Increased allowance proposed for 2013/14.	3,664	-474	5,580

6.4 Update of Previously Assessed Projects

Halcrow identified, to the extent possible from the information provided, the level of expenditure incurred and its timing, in respect of capital projects previously reviewed under the Interim Price Monitoring Program. This information was supplemented by additional information provided by QUU.

The status of these projects is summarised in **Table C.1** (refer **Appendix C**), which also summarises themes associated with change in expenditure such as timing and scope. The main themes observed included:

- expenditure and/or project deferral;
- timing/delivery;
- scope definition issues; and
- Restructured delivery or change in project code.

Expenditure and/or project deferral generally resulted in a reduction of expenditure in the planned year, with expenditure still being required in the following years. Broadly this indicates that QUU is unable to deliver the full amount of capital works they planned in previous years. Associated with this are timing/delivery issues which generally had negative impacts on project cost. Those projects delivered behind schedule, generally have a negative impact, as expenditure is still required in future years. Where projects were completed earlier than expected, QUU has indicated reduced expenditure associated with the time value of investments.

It is evident that additional expenditure was required in several cases where scope was not defined appropriately. This generally appears to be related to poor scope definition and feasibility level for projects initiated by the constituent councils.

In QUU's responses, it stated that some funding for some projects reviewed projects now falls under alternative project codes. Halcrow is unable to determine whether this may or may not be masking true project expenditure.

6.5 Summary Assessment of Capital Expenditure

6.5.1 Overview

Of the ten (10) projects reviewed in detail, expenditure was generally found to be prudent. The main exception was a sub-project which involves rehabilitation of the Manly Elevated Steel Tank. In this case, QUU has identified that the asset is no longer required for water supply purposes, however, has nonetheless proceeded with the work. Whilst retention of the asset may be driven by its heritage status, no detailed assessment of the options (ie. decommissioning, rehabilitation or replacement has been provided for review).

Whilst allowances for direct (or base) expenditure were generally found to be efficient, Halcrow has assessed the contingency allowances for a number of the projects to be excessive. This is reflected in both the rate (percentage) at which contingency has been

included and, in some cases, a duplication of the assessed allowance. Some potential for delivery efficiencies has also been identified.

More specific observations arising from the review are as follows:

- Halcrow found that QUU generally has a very low appetite for risk within the business, and some of its funded programs of work were based on a ‘zero failure’ driver. Whilst total protection against asset failure is an aspirational target within a water business, Halcrow does not believe it is prudent to systematically replace assets on the basis of age and type, with limited regard to measured asset performance. Comprehensive replacement, regardless of performance, does not provide good value for money to its customer base. Halcrow is of the view that a more balanced approach should be considered, striking a balance between asset performance and cost.
- During the course of the review, Halcrow assessed a number of rolling renewals programs. It was found that the individual projects within these programs were developed on an ad-hoc basis, based on individual business cases. Whilst it is understood that actual asset condition and performance is used as a trigger to progress each business case, for routine but necessary programs of this nature, Halcrow would expect to see evidence of a more holistic approach to program development and delivery that would enable QUU to better define the work in advance of delivery and also explore different delivery methods which would assist in improving the efficiency of delivery.
- Following on from this, Halcrow found that QUU has tended to procure these programs in relatively small, separate design, supply and construct packages. Whilst this enables QUU to maintain control over delivery of the program and ensure delivery by specialist contractors, it is not conducive to driving efficiencies into the project delivery process. Halcrow considers that a long term, reasonably well defined program of renewals would normally lend itself to a separately tendered, long term framework contract that would potentially introduce economies of scale through reduced procurement costs and lower unit costs due to the surety of work.
- Whilst it is usual practice to include for contingency within construction estimates, Halcrow considers the overall contingency allowance applied by QUU to be excessive, particularly those applied to projects within their renewals programs. As this review was limited to expenditure that was forecast to occur during the current year, Halcrow would expect the proposed scope and delivery method to be reasonably well defined, and not subject to the variance allowed for by QUU (up to 55 percent in one instance).
- Halcrow also notes that there are inconsistencies amongst the various sources of information. Whilst cost information presented in business cases generally aligns with those shown in QUU’s Capital Investment Program, there is often a disconnect with information presented in the Project Manager (monthly) Reports and the Interim Price Monitoring Information Return.

Notwithstanding the above, Halcrow considers that QUU has generally adopted a sensible approach to project development, which (in most cases) is based on the preparation of a detailed feasibility report. This process ensures the project need is appropriately assessed against the perceived corporate risks and that a number of different options and procurement strategies are considered to ensure the solution is both prudently and efficiently delivered against QUU's risk profile.

6.5.2 Implications for Remainder of Capital Program

As highlighted within the individual project assessments (refer **Section 6.3** and **Appendix A**) and summarised above, Halcrow has found the overall contingency allowance applied by QUU, and particularly those applied to projects within the renewals programs, to be excessive. In summary, it was found that contingency allowances ranging between 10 and 55 percent were applied to the renewals projects. Whilst it is difficult to equate an overall average percentage contingency allowance applied to the renewals program, Halcrow has estimated it to be in the order of 18 percent.

As this review was limited principally to expenditure that is forecast to occur during the current year, Halcrow would expect the proposed scope and delivery method to be reasonably well defined, and not subject to the variance allowed for by QUU. On this basis, reductions varying between 5 and 14.0 percent have been applied in respect of the five (5) assessed renewals projects; the weighted average reduction is 7.6 percent.

In support of Halcrow's assessment, it is noted that the *Review of Owner's Costs and Contingency Allowances*,²⁰⁵ prepared by Evans and Peck for the QCA in 2009, identified that projects with a delivery horizon of 0-5 years should have a contingency allowance of 5-10 percent.²⁰⁶ Whilst it is apparent that a number of the schemes proposed for delivery during the year are less advanced than would be expected for a current year program, and contingency in excess of 10 percent is expected on some schemes, Halcrow considers there is scope to consider applying an overall reduction in renewals related expenditure.

Of the remaining five (5) sampled projects, adjustment of the forecast expenditure is recommended in respect of only one (1) project. The basis of this adjustment is not considered systemic; extrapolation of this finding is not considered appropriate.

On the basis of the above discussion, Halcrow consider there is scope to apply an overall reduction to renewals related capital expenditure, as follows:

- for 2012/13 – a reduction of 5 percent (which equates to the lower limit of adjustments made to sampled projects;
- for 2014/15 – a reduction of 3 percent (18 percent down to 15 percent contingency to account for less developed schemes); and
- for 2013/14 – a reduction of 4 percent (incremental change between 2012/13 and 2014/15).

²⁰⁵ Evans and Peck, *Review of Owner's Project Cost and Contingency Allowances*; Queensland Competition Authority, November 2009.

²⁰⁶ *Ibid*, Section 10.2, Table 8.

The proposed extrapolated adjusted is summarised in Table 6.8; further detail is shown in Appendix B (refer Table B.2).

Table 6.8: Extrapolated Adjustment of Renewals Capital Expenditure – 2010/11 to 2014/15 (\$'000 nominal)

Expenditure Profile (\$value)	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
QUU Forecast Renewals Expenditure Profile	83,741	104,587	142,628	142,672	146,034	619,663
QUU Forecast Renewals Expenditure Profile (excluding sampled projects)	75,602	94,133	116,623	124,928	122,443	533,730
Proposed total adjustment	-	-	-5%	-4%	-3%	-
Proposed extrapolated adjustment of renewals projects	-	-	-5,831	-4,997	-3,673	-14,502

6.5.3 Recommended Capital Expenditure

QUU's recorded actual and proposed capital expenditure over the period 2010/11 to 2014/15, together with Halcrow's recommended level of capital expenditure, is summarised in Table 6.9. Further details of the assessment are summarised in Appendix B.

Table 6.9: Actual/Forecast and Recommended Capital Expenditure – 2010/11 to 2014/15 (\$'000 nominal)

Expenditure Profile (\$value)	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
QUU Forecast Expenditure Profile	102,247	163,359	298,636	455,989	388,157	1,408,388
Proposed adjustment – sampled projects	-	-	-2,869	1,233	-436	-2,072
Proposed extrapolated adjustment of renewals projects	-	-	-5,831	-4,997	-3,673	-14,502
Proposed total adjustment	-	-	-8,700	-3,764	-4,109	-16,574
Halcrow Recommended Expenditure Profile	102,247	163,359	289,936	452,225	384,047	1,391,814

It is noted that the total proposed adjustment over the five (5) year period amounts to a reduction of 1.7 percent of the value of the sampled projects, as represented by QUU's forecast expenditure profile. The adjustment in 2012/13 amounts to a reduction of 6.9 percent.

When proposed adjustments based on extrapolation of the findings in respect of the sampled projects is taken into account, the total proposed adjustment over the five (5) year period amounts to a reduction of \$16.574 million or 1.2 percent of the capital program. The adjustment in 2012/13 amounts to a reduction of \$8.700 million or 2.9 percent of the forecast capital program.

It is noted that this assessment relates to 'as incurred' expenditure, and excludes any allowance for capital overhead and borrowing (interest) costs.

7 Conclusions and Recommendations

7.1 Overview

Halcrow's review of Queensland Urban Utilities' operating and capital expenditure has been principally based on information contained in its Interim Price Monitoring Information Return (including Data Template) and information provided by QUU in response to formal information requests. Halcrow has also conducted interviews/discussions with QUU representatives in order to gain an understanding of its adopted planning processes and the justification for the proposed levels of investment.

From an overall perspective, QUU's forecast expenditure for 2012/13 is generally deemed prudent. Halcrow does not, however, consider all components of the forecast levels of expenditure to be efficient; there are concerns regarding the efficiency of some elements of both operating and capital expenditure.

Specific areas of operating expenditure deemed to reflect inefficiencies include employee expenses, corporate costs and the allocation made in respect of an increase in planned maintenance activities. Contingency allowances for elements of some capital projects are the primary issue in respect of capital expenditure.

7.2 Management Systems and Processes

On the basis of Halcrow's review of QUU's management systems and processes, it has made the following observations:

- From an overall perspective, it appears that QUU is organised and undertakes functions that are consistent with other water industry distributor-retailer organisations.
- QUU's operational and capital activities are currently guided by its Strategic Asset Management Plan (SAMP), which is derived from those previously implemented by its constituent councils. The SAMP will be replaced by QUU's Netserv Plan, which is currently in draft form and expected to be finalised before 1 July 2013, as required.
- Strategies in respect of asset management planning appear to be generally in alignment with industry practices, although an optimum balance is yet to be achieved across the full extent of QUU's operations.
- QUU's capital planning processes provide a platform for ensuring prudence and efficiency in the development and delivery of its capital program. The detailed review of a sample of capital projects/programs (refer **Section 6**) indicates that, in general, they have been found to be effectively implemented.
- These maintenance strategies and the manner in which they are implemented are consistent with those typically adopted by water companies, and are expected to provide the basis for an optimal maintenance approach. Halcrow notes, however,

that its detailed review of operating expenditure has revealed that QUU is currently in the process of implementing a more proactive approach to its maintenance activities which, in the short term at least, is driving increases in operating expenditure.

- QUU's operational budgeting process involves the development of a base (business as usual) budget using a zero based approach and reference to historical trends. Adjustments are then made for extraordinary items such as new initiatives and to incorporate efficiencies.

In summary, QUU's management systems and approach are generally consistent with other water industry distributor-retailer organisations. On this basis, Halcrow is of the view that QUU implements an appropriate management platform to facilitate operational prudence and efficiency. Achievement of these outcomes is, however, dependent upon effective implementation of the processes and procedures that comprise the detail of these systems.

7.3 Operating Expenditure

QUU's operating expenditure (excluding bulk water) increases (+10.3 percent) at a significantly greater rate than the assumed change in the CPI in 2012/13.

This results from a range of factors including:

- Escalation rates for some expenditure items increasing at a greater than the change in the CPI.
- Large expenditures are being incurred as a result of the separation from Brisbane City Council.
- Enhancements to current processes and programs (eg. greater emphasis on proactive maintenance).
- Government imposed charges and need to comply with government legislation.

It should, however, be noted that:

- While made necessary by the actions of Council, the separation process has not gone smoothly and may have incurred unnecessary costs.
- To the extent they remain, the costs of Council provided services have increased at a significantly greater rate than the general movement in prices.
- In the transition process, some activities are being duplicated as the service provider changes.
- Water purchases are inflated by the level of non revenue water, notwithstanding this is, in part, a legacy issue.
- QUU's attention was diverted by the 2011 flood which delayed work required as part of the transition to the new entity and caused additional expenditure as a result of its physical impact.
- QUU's costing systems, as reflected in its reports to the QCA, fall short of best practice for allocating costs between products and regions.

- There remain some identified opportunities for improved efficiency which are still being/yet to be investigated (and implemented as appropriate).
- QUU's costs remain much higher than its inter-state comparators, although they are inflated in part by the transition/separation program.

QUU has identified a number of new initiatives and opportunities for efficiency gains that it either plans to or has already commenced to implement; the proposed actions are considered to be generally appropriate for QUU as it transitions into its new organisational regime. Some of these initiatives will lead to improved efficiencies (although detailed evidence has not been provided), whilst others will result in improved levels of service or regulatory compliance albeit at some increase in operational cost.

Halcrow is of the view that some 40 percent of the expenditure identified by QUU as 'new initiatives' would more appropriately be identified as 'business as usual' expenses; this has the impact of increasing the base level of operating expenditure and, as a consequence, the assessment as to whether QUU has/is forecast to achieve the efficiency targets set by the QCA. When these adjustments are taken into account, QUU fails to meet 2 percent per annum efficiency targets in either 2011/12 or 2012/13 based on the figures reported in its Interim Price Monitoring Information Return; it does marginally exceed the target when actual recorded expenditure for 2011/12 is taken into account.

On the basis of its observations and analysis, Halcrow recommends a number of adjustments to reflect identified inefficiencies in respect of Employee expenses (\$4.84 million), Corporate expenses (\$2.95 million) and Other Materials and Service expenses (\$6.82 million). In total, Halcrow proposes that a reduction of some \$14.61 million in QUU's forecast of \$265.36 million is required to reflect an efficient level of regulated operating expenditure for 2012/13. This represents a downward adjustment in the order of 5.5 percent.

7.4 Capital Expenditure

Of the ten (10) projects reviewed in detail, expenditure was generally found to be prudent. The main exception was a sub-project which involves rehabilitation of the Manly Elevated Steel Tank. In this case, QUU has identified that the asset is no longer required for water supply purposes, however, has nonetheless proceeded with the work.

Whilst allowances for direct (or base) expenditure were generally found to be efficient, Halcrow has assessed the contingency allowances for a number of the projects to be excessive. This is reflected in both the rate (percentage) at which contingency has been included and, in some cases, a duplication of the assessed allowance. Some potential for delivery efficiencies has also been identified.

More specific observations arising from the review are as follows:

- Halcrow found that QUU generally has a very low appetite for risk within the business, and some of its funded programs of work were based on a ‘zero failure’ driver. Whilst total protection against asset failure is an aspirational target within a water business, Halcrow does not believe it is prudent to systematically replace assets on the basis of age and type, with limited regard to measured asset performance. Halcrow is of the view that a more balanced approach should be considered, striking a balance between asset performance and cost.
- During the course of the review, Halcrow assessed a number of rolling renewals programs. It was found that the individual projects within these programs were developed on an ad-hoc basis, based on individual business cases. Whilst it is understood that actual asset condition and performance is used as a trigger to progress each business case, for routine but necessary programs of this nature, Halcrow would expect to see evidence of a more holistic approach to program development and delivery, which would in turn assist in improving the efficiency of delivery.
- Following on from this, Halcrow found that QUU has tended to procure these programs in relatively small, separate design, supply and construct packages. Whilst this enables QUU to maintain control over delivery of the program, it is not conducive to driving efficiencies into the project delivery process. Halcrow considers that a long term, well defined program of renewals would normally lend itself to a separately tendered, long term framework contract that would introduce economies of scale through reduced procurement costs and lower unit costs due to the surety of work.
- Whilst it is usual practice to include for contingency within construction estimates, Halcrow considers the overall contingency allowance applied by QUU to be excessive, particularly those applied to projects within their renewals programs. As this review was limited to expenditure that was forecast to occur during the current year, Halcrow would expect the proposed scope and delivery method to be reasonably well defined, and not subject to the variance allowed for by QUU (up to 55 percent in one instance).
- Halcrow also notes that there are inconsistencies amongst the various sources of information. Whilst cost information presented in business cases generally aligns with those shown in QUU’s Capital Investment Program, there is often a disconnect with information presented in the Project Manager (monthly) Reports and the Interim Price Monitoring Information Return.

Notwithstanding the above, Halcrow considers that QUU has generally adopted a sensible approach to project development, which (in most cases) is based on the preparation of a detailed feasibility report. This process ensures the project need is appropriately assessed against the perceived corporate risks and that a number of different options and procurement strategies are considered to ensure the solution is both prudently and efficiently delivered against QUU’s risk profile.

On the basis of the detailed review undertaken in respect of the ten (10) identified projects, Halcrow has recommended that the allowed 2012/13 expenditure in respect of seven (7) projects be reduced, including:

- one (1) project for which a sub-project is not considered to be prudent;
- one (1) project for which the actual contracted unit rates are less than the rates adopted for forward budgeting purposes;
- two (2) projects for which contingency allowances have been considered excessive;
- one (1) project for which adopted procurement processes are considered to be inefficient, and for which some elements of the work are considered imprudent;
- one (1) project for which sub-projects have been found to include redundant scope, present potential efficiency gains and include excessive contingency allowance; a further global reduction has been applied to other sub-projects; and
- one (1) project for which a reduced amount of expenditure will be incurred during 2012/13; an increase in expenditure in 2013/14 is proposed to reflect additional justified scope of work.

Halcrow recommends that 2012/13 forecast expenditure in respect of the sampled projects is reduced by \$2.869 million, which represents 6.9 percent of the forecast expenditure (\$41.327 million) for those projects. On the basis of the observations made, Halcrow considers that a further adjustment of \$5.831 million be made in respect of the remainder of the renewals programs; this equates to 5.0 percent of the value of those programs (\$116.623 million).

In total, a reduction of \$8.700 million is proposed in respect of the forecast capital expenditure to be incurred in 2012/13; this represents a 2.9 percent reduction in the total capital program. Reductions are also proposed for future years.



Appendix A. Capital Project Summaries – Detailed Review

A.1 BDWDAA04 - Brisbane Water Reservoirs Renewals Program

A.1.1 Project Description

QUU operates and maintains 124 reservoirs. A rolling renewals program is implemented with the aim of minimising the risk of failure of reservoirs, while maximising the operable life of the assets, optimising water quality and ensuring compliance with current Australian Standards.

This program aims to renew/upgrade those reservoirs which are deemed to be in the poorest condition. Condition audits of reservoirs are undertaken; identified defects are recorded and rated according to severity. Projects within this program are selected from a prioritised list based on the findings of the condition audits.

As shown in the Renewals Program List,²⁰⁷ BDWDAA04 comprises three sub-projects, BDWDAA04A04, BDWDAA04A05 and BDWDAA04A08, related to reservoir renewals to be delivered in 2012/2013, as follows:

- ***Project BDWDAA04A04 and BDWDAA04A08 Tarragandi Reservoir:***

Projects BDWDAA04A04 Rehabilitation of Tarragandi Reservoir Roof project and BDWDAA04A08 Rehabilitation of Tarragandi Water Reservoir Floor Joints, Columns & Valve Towers Repairs are civil/structural projects being delivered over two years, 2011/12 and 2012/13.

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

In 2009 a visual condition assessment of the entire roof structure (all timber purlins, timber rafters, steel I-beam and roof sheeting), was undertaken which identified issues with the roof sheeting and support structure that required immediate attention. In 2010, a preliminary condition assessment of the site identified high priority defects in relation to leaking floor joints and cracks in the east and west overflow towers.

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

- ***BDWDAA04A05 Manly Elevated Steel Tank:***

The Manly Elevated Steel Tank Reservoir services Manly and Roles Hill. The tank, which has a storage capacity of 1 megalitre (1ML), was commissioned in 1953. The tank is elevated 30 metres above ground and is supported by six mild steel braced columns.

²⁰⁷ QUU, *Asset Class; Water Reservoirs Renewals Program; Program List; Financial Year 2012/13*, approved 20 January 2012.

In 2005, a independent condition report identified that urgent repair to the external coatings, substantial repair work to internal ceiling surfaces and minor patchwork to the walls and floor within the tank was required.

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

A.1.2 Key Reference Documentation

Documentation reviewed in respect of this project included:

- Brisbane City, *Memorandum Re Manly & Roles Hill Reservoirs Asset Disposal Recommendation*, 22 October 2007;
- Brisbane City, *Memorandum Re Manly & Roles Hill No. 1 Reservoirs – Recommendation for Rehabilitation & Condition Assessment*, 22 October 2007;
- QUU, *Post Market Submission, Refurbishment of the Manly Elevated Steel Tank*, 6 June 2012;
- *Rehabilitation Submission for Rolling Program – Rehabilitation of Tarragandi Reservoir Roof Project*, Reference No BDWDAA04A04, authorised 5 April 2011;
- *Rehabilitation Submission for Rolling Program – Rehabilitation of Manly Elevated Steel Tank*, Reference No BDWDAA04A05;
- *Rehabilitation Submission for Rolling Program – Rehabilitation of Tarragandi Water Reservoir Floor Joints, Columns & Valve Towers Repairs*, Project Reference No BDWDAA04A08;
- *2012/13 Capital Investment Program, Renewals Project Summaries*, updated 17 August 2012; and
- *Asset Class Water Reservoirs Renewals Program – Program List*, Project Reference No ADWDAA04 Financial Year 2012/13, approved 20 January 2012.

A.1.3 Key Drivers and Obligations

The key drivers listed in the Capital Investment Program are:

- To maintain water supply provision in accordance with QUU’s Customer Service Reliability Standards;
- Maintaining network reliability and performance; and
- Economic benefit.

No further project drivers are listed in the feasibility submission documents. The feasibility submission documents do, however, list various Australian Standards and QUU water authority standards with which the proposed works must comply.

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

Halcrow does not, however, consider the project drivers listed in the Capital Investment Program appropriate for the Manly Elevated Steel Tank without a detailed options assessment which takes into consideration the potential decommissioning of the tank. The project has proceeded on the basis of Heritage importance and for use in emergency situations.²⁰⁸

A.1.4 Solution Development

BDWDAA04A04 Tarragandi Reservoir Roof Project

Scope development of project BDWDAA04A04 appears to be based on the visual condition assessment. As this is a rehabilitation (renewals) project, work proposed is generally to enable like-for-like replacement of materials (apart from roofing material) to ensure that the reservoir meets required standards. No assessment of options was undertaken.

The scope of project BDWDAA04A04 intentionally excluded scope for repair to floor joints, columns and valve towers. This was done as it was difficult to appropriately define a scope without first draining and cleaning the reservoir to enable a detailed inspection. It was planned that any required works to floor joints, columns and valve towers would be undertaken immediately following roof repairs; this work has been identified as project BDWDAA04A08.

In developing the scope for project BDWDAA04A04, several key assumptions were made; these included:

- undertaking only those works recommended in the 2009 condition report;
- aluminium roofing was to be used (as it has a longer design life, although is more expensive than steel); and
- various assumptions related to construction access and timing.

The difference in the price of roof cladding is \$23 per square metre for Colorbond steel roofing versus \$37 per square metre for Permalite Alspan aluminium roofing. This equates to a difference of approximately \$165,200 for the 11,800 square metre roof area.

Although regular inspections are proposed every 5 years, there is no indication of reservoir condition post-works and whether any future work will be required in say 5 or 10 years. It is, however, noted that Colorbond may not be able to provide warranty on corrosion for the normal 30 years unless the ventilation issues are resolved whereas Permalite can provide a warranty for 40 years. Based on warranty, and the extension of roof life, the selection of aluminium is considered appropriate.²⁰⁹

²⁰⁸ QUU notes the requirement for “*use in emergency situations*” in its response to Halcrow’s draft report. Halcrow notes that no information was provided to demonstrate that this retention of this asset is required to enable QUU to meet its defined customer reliability standards.

²⁰⁹ Halcrow is also aware of previous work that demonstrates the cost effectiveness of using aluminium as opposed to Colorbond steel roof sheeting on reservoir roofs.

BDWDAA04A08 Tarragandi Water Reservoir Floor Joints, Columns & Valve Towers Repairs

The scope of this project is essentially the excluded scope of project BDWDAA04A04, ie. the rehabilitation of floor joint sealant, minor rehabilitation of 60 concrete columns supporting the roof structure, rehabilitation of the east and west valve towers and rehabilitation of wall joints. Similar to project BDWDAA04A04, no further assessment of options appears to have been undertaken.

BDWDAA04A05 Rehabilitation of Manly Elevated Steel Tank

In 2007, Brisbane Water internally discussed the idea of disposing of the Manly Elevated Steel Tank, however, difficulties associated with cultural heritage value and the fact that Brisbane City Council, City Property Group would not agree to subdivide the site or permit demolition of the decommissioned reservoir were cited. A similar discussion surfaced again in 2009; a firmer stance was again taken that the structures could not be demolished and that new condition assessments were required to determine the works required to repair/rehabilitate the asset to an acceptable level.

Scope development of BDWDAA04A05 is based on returning the tank back to full working order and compliance with Australian and QUU Standards.

Whilst QUU states that it is not possible to remove (demolish) the Tank, no formal evidence has been provided to suggest that alternative options for its retention (eg. partial rehabilitation of external coatings (and retiring the asset use as a reservoir), or installation of a replacement facility (new tank)) have been considered. Furthermore, it is unclear as to why the decision was made to return the facility to full working order if it is not required; this decision has resulted in the need to select (at additional cost) coatings suitable for contact with drinking water. The scope of work was also expanded during the market evaluation period to include refurbishment of the tank support structure. It is, however, noted that the original project drivers do not identify safety as a concern.

A.1.5 Project Delivery

Initially four projects (BDWDAA04A04, A05 and A08 and another project known as “Brookes Drive” (a growth project)) were bundled together and tendered as a single package of works. According to QUU, a single supplier was unable to complete all packages of works. Consequently tenderers bid on either one (1) or two (2) of the four projects and separable portions were issued for the works.

BDWDAA04A04 and BDWDAA04A08 Tarragandi Reservoir

With respect to Tarragandi Reservoir, complexities were identified during the tender period as to how the reservoir would be isolated as the reservoir was used to control supply pressure fluctuations. Originally QUU agreed with the selected tenderer that the reservoir could be taken off line without further work being required. Subsequently a pipe burst prompted a reassessment of risk and a pressure reducing valve (PRV) was installed by QUU; installation of the PRV enabled the project to proceed. The cost of the PRV installation is unknown and whether it is included in the total cost of project BDWDAA04A04 is unclear.

Work on BDWDAA04A04 commenced on 3 October 2012; it has an estimated construction period of 8-12 weeks. Practical completion is currently scheduled for July 2013, some six weeks later than expected.

Work on BDWDAA04A08 is expected to begin in February 2013, with physical work on the columns to be undertaken in March/April 2013. Practical completion is currently forecast for October 2013, some 11 weeks later than originally anticipated (in June 2013).

The August 2012 Project Manager Report indicates three quotes were received for work related to BDWDAA04A08 on the floor joints, columns and valve towers repairs.

The estimated final completion date is recorded as 2012/13 in the program list for all projects.

BDWDAA04A05 Rehabilitation of Manly Elevated Steel Tank

After the receipt of two tender submissions, the contract for rehabilitation of Manly Elevated Tank was awarded to at a cost of \$783,958. Although the award was one week behind schedule, the project is currently anticipated to finish eight weeks ahead of schedule.

Selection of the successful tenderer was based on a value for money index and included evaluation criteria covering service requirements (40 percent); product requirements (5 percent); offeror capability and viability requirements (40 percent); and Environmental, Quality and Safety (15 percent).

Combined program

There does not appear to be any rationale behind why the Tarragandi projects were bundled with the Manly Tank project for procurements purposes. Whilst this option may have appeared to be easiest for QUU, each package (BDWDAA04A04, A05 and A08) are distinctively different in terms of skills sets required. It is not surprising that, when these projects went to tender, no single contractor bid for the entire package. QUU has, however, been flexible in selecting individual contractors based on experience, method and price, which indicates an ability to recognise how efficient outcomes can be driven.

A.1.6 Cost Estimate

BDWDAA04A04 Tarragandi Reservoir Roof Project

The cost estimate for the roof rehabilitation project BDWDAA04A04 was developed principally by a consultant quantity surveyor using the minor capital projects costing sheet template. This allows the nomination of unit rates and quantities.

The cost estimates were split into preliminaries, civil construction, mechanical/electrical and control systems which totalled \$2,620,010 (\$2009/2010). On top of this was allowances for shut down and testing of valves, providing alternate water supply and an allowance for pipe busts totalling \$120,000 (\$2009/2010). A 26.5 percent contingency factor was then applied bringing total estimated construction to \$3,434,313 (\$2009/2010). Design management and overhead costs were \$945,123 (\$2009/2010).

The total project cost is approximately \$4,380,000 (\$2009/2010), which was able to be reconciled with the cost that appears in the Capital Works Program for expenditure in 2012/13.²¹⁰

The contract was awarded on a lump sum of \$3,240,000 (\$2012/2013). It was subsequently reported in the August 2012 Project Management report that there is a reduction of \$558,000 in line with post-market report. This suggests that estimated completion costs of \$3,822,000 (ie. \$4,380,000 less \$558,000) will be incurred in 2012/13. It is not known what the final contingency, design management and overhead costs applied to the project was, however, given the \$558,000 reduction, actual contingency, design management and overhead costs are expected to be less than the original cost estimate.

Although the original cost estimate identified zero construction margin, it is assumed that the winning tender did achieve a positive margin.

It is unclear why such high a contingency (26.5 percent) was initially selected for this project given the scope is relatively clear and excluded work that could not be defined until the reservoir was drained.

BDWDAA04A08 Tarragandi Water Reservoir Floor Joints, Columns & Valve Towers Repairs

The cost estimate for this project appears to have been completed in circa December 2011 using QUU's standard costing template. Construction costs were estimated to be \$754,000 (\$2011/2012). On top of this, there is \$113,100 (15 percent) construction contingency and \$238,626 in overhead costs comprising allocated for overheads comprising design costs (7 percent), design management (3 percent), project management (10 percent) and contract management (5 percent). Total expenditure is expected to be \$1,105,756.

Although this project is listed in the renewals program and forms part of this review, QUU has identified that it will be funded as operating expenditure and consequently has not been included in the capital expenditure forecasts.²¹¹

BDWDAA04A05 Rehabilitation of Manly Elevated Steel Tank

In the 2007 memorandum discussing disposal options, the replacement value for the Manly Steel Tank was recorded to be \$400,000.

The original cost estimate for this project was prepared in March 2010. Construction costs total \$366,110 (\$2009/2010). On top of this, there is also \$7,000 in 'other' costs and \$91,528 (or 25 percent) allowance for contingency. On top of construction costs, there was \$127,869 (25 percent) allocated for overheads comprising design costs (7 percent), design management (3 percent), project management (10 percent) and contract management (5 percent), thereby amounting to a total cost of \$592,507.

²¹⁰ The program has adopted the same \$2009/2010 dollars.

²¹¹ Given the nature of the work involved, Halcrow supports expensing the expenditure incurred in respect of this project. The repair work is not expected to materially extend the life of the asset, so does not qualify for capitalisation.

As noted above, the project was awarded for a contract price of \$783,958 in June 2012. On top of this, contract contingency was estimated to be \$156,792 as recorded in the post-market submission. An additional program contingency of \$100,000 was allowed for QUU, and \$200,000 was allowed for 'internal, program and contract management, and operational support costs', such that the estimated total cost for rehabilitation of the Manly Steel Tank was \$1,240,750.

Whilst the costs for the work are considered to be within the expected range, undertaking this work does not appear to be prudent.

Combined

Expenditure to be incurred in 2012/13 is forecast to be \$4,653,000. This amount is the sum of the original estimated expenditure in 2012/13 of \$273,000 for the Manly Steel Tank plus the total originally estimated cost of \$4,380,000 for the Tarragandi Reservoir. The Tarragandi Reservoir estimate was subsequently reduced by \$558,000 such that total cost would be \$3,822,000. Forecast expenditure associated with the Manly Steel Tank in 2013 was increased from \$273,000 to \$800,000.

In the August Project Manager Report, estimated expenditure is reported as \$6,001,000 for 2012/13. This includes the operating expenditure of \$1,106,000 associated with BDWDAA04A08 and carryover of \$800,000 from the previous year.

Given expenditure associated with Tarragandi Reservoir, which will be fully incurred in 2012/13, amounts to \$3,822,000 and expenditure associated with the Manly Steel Tank amounts to \$800,000 (carry over from previous year), then total capital expenditure to be incurred in 2012/13 should be \$4,622,000.

Halcrow considers the allowance for overhead costs, which amounts to some 25 percent on top of construction costs, to be high. BWDAA04A04, A05 and A08 are projects that could essentially be independently managed by a third party and projects that have little interface with other QUU projects. It is therefore difficult to agree that project management and contract costs could total 15 percent on top of construction costs. Furthermore, there is no justification to demonstrate that QUU's standard design and design management costs totalling 10 percent are required for surface rehabilitation projects; more specifically, it is unclear why QUU would need to maintain such detailed involvement in surface rehabilitation works that could be easily managed by the nominated contractors.

A.1.7 Implications for Operating Expenditure

There is not expected to be any significant reduction in operating expenditure as a result of the renewals work completed on either the Tarragandi Reservoir (roof replacement) or Manly Elevated Steel Tank.

It is, however, noted that QUU intends to expense expenditure incurred in respect of Tarragandi Reservoir Floor Joint, Column and Valve Tower Repairs (BDWDAA04A08). As previously noted, Halcrow considers this appropriate.

A.1.8 Assessment of Prudence and Efficiency

BDWDAA04A04 and BDWDAA04A08 Tarragandi Reservoir

On the basis that the existing Tarragandi Reservoir is not operating safely and reliably, and is currently was not meeting Australian Standards, the roof replacement is considered both necessary and prudent. QUU's approach to conducting rehabilitation of floor joints, columns and valve towers repairs whilst the reservoir was taken offline is also considered sensible and prudent.

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

Cost estimates appear to be reasonable based on QUU construction methodology and the fact that the projects were competitively tendered. Initial estimates of contingency are, however, considered high for BWDAA04A04, where the scope of the project was very well defined. It was therefore no surprise that tendered price was less than originally estimated. Halcrow suggests that, going forward, QUU should only consider applying higher contingency if aspects of work are undefined or high risk.

Application of the full typical allowance for design and design management costs to the BWDAA04A04 appears excessive given the nature of the work involved. Whilst some design input may well be justified, management of the work will be undertaken predominantly within the contract management allowance.

Halcrow therefore considers the delivery of projects BWDAA04A04 and BWDAA04A08 (notwithstanding that it is to be fully expensed) to be generally prudent and efficient and does not recommend any adjustment to expenditure.

BDWDAA04A05 Rehabilitation of Manly Elevated Steel Tank

Full rehabilitation of Manly Elevated Steel tank is not considered prudent for the following reasons:

- it is no longer required for water supply purposes;
- no detailed options assessment was undertaken that considered potential decommissioning;
- the project cost has amounted to some \$1,240,750 or 2.67 times the original estimated amount; it may have been viable to completely replace the entire tank; and
- the project appears to be completely driven by a heritage requirements.

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

Although this project is not considered to be prudent, delivery of the adopted scope of work does appear to be efficient. It is, however, recommended that only expenditure associated with making the structure safe be recognised as being prudent and efficient.

It is difficult to assess the value of 'safety' works in the absence of a detailed breakdown of costs, however, it is noted that the works involve external repair and coating of the tank, internal repair and coating of the tank and re-painting of the support structure (approximately \$150,000 direct cost). It could be considered that only the external works would be required from a safety viewpoint.

Given that the total project cost now amounts to \$1,240,750, it is suggested that a maximum of 50 percent of this amount be considered prudent. It is therefore recommended that the forecast expenditure for 2012/13 be reduced by \$620,000.

Summary

The proposed adjustments can be summarised as shown in Table A.1.

Table A.1: BDWDAA04 - Brisbane Water Reservoirs Renewals Program – Forecast 2012/13 Capital Expenditure (\$'000 nominal)

Expenditure Item	Amount
QUU Forecast (from Interim Price Monitoring Information Return)	\$4,653
Adjustments:	
▪ less reduced cost on Tarragandi Reservoir Roof project	-\$558
▪ less forecast allowance for Manly Elevated Tank in 2012/13	-\$273
▪ plus revised 2012/13 allowance for Manly Elevated Tank	+\$800
▪ less estimate of expenditure not deemed prudent	-\$620
▪ Net adjustments	-\$651
Halcrow recommended Expenditure Forecast	\$4,002

A.1.9 Assessment of Reported Expenditure

In the supporting documentation for its Interim Price Monitoring Information Return, QUU has identified actual and proposed expenditure in respect of the Brisbane Water Reservoirs Renewals Program amounting to \$8.977 million (\$nominal) over the five (5) year period 2010/11 to 2014/15, with \$4.653 million (\$nominal) forecast to be incurred in 2012/13. The proposed expenditure profile is shown in Table A.2.

**Table A.2: Actual and Forecast Capital Expenditure (\$'000 nominal)
 - BDWDAA04 - Brisbane Water Reservoirs Renewals Program**

Expenditure Profile (\$value)	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
QUU Forecast Expenditure Profile	82	1,090	4,653	1,557	1,595	8,977
Proposed adjustment	-	-	-651	-	-	-651
Halcrow Recommended Expenditure Profile	82	1,090	4,002	1,557	1,595	8,326

On the basis of the assessment outlined above, it is recommended that the forecast expenditure in 2012/13 and future years be reduced as shown in **Table A.2**.

A.2 BDWDA06 - Brisbane Water Meters Renewals Program

A.2.1 Project Description

QUU owns and maintains a total of over 418,000 domestic and non-domestic meters used for billing purposes. The Water Meter Renewals Program is a rolling program of mechanical testing and refurbishments, implemented in order to maintain operational performance of meters.

An Asset Management Plan established the need to accelerate the number of meter replacements between 2007/08 and 2012/13 in order to minimise risk of meter failure and to keep pace with meter degradation over time. The greatest need was found to be replacement of 20mm meters installed in Brisbane in the early 1990s.

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

The *National Measurement Act 1960* requires that utility meters used for trade must be verified in terms of accurate measurement in accordance with the following:

- AS3565.1 – 2004: *Meters for water supply – cold water meters*; and
- AS3565.4 – 2007: *Meters for water supply – Part 4 In-service compliance testing*.

A.2.2 Key Reference Documentation

Documentation reviewed in respect of this project included:

- *2012/13 Capital Investment Program, Renewals Project Summaries*, updated 17 August 2012;
- *Business Case for Domestic and Non-Domestic Meter Rehabilitation/Replacement Program ADWDA06 2011/14*;
- *Water Meters Renewals Program List, Project Reference ADWDA06*; and
- *PM Monthly Project report, Brisbane Water Meters Renewals Program*, dated August 2012.

A.2.3 Key Drivers and Obligations

The major drivers for meter rehabilitation and testing are compliance with AS3565.4, potential loss of revenue to the organisation and customer charge inequality caused by incorrect meter registration.

Other renewals drivers are:

- Results of meter compliance testing;
- Attrition statistics;
- Zero consumption statistics;
- Kilolitre replacement points;

- Age based replacement points;
- Economic modelling;
- Improvement opportunities;
- Small scale new technology trials; and
- Data management and database improvement opportunities.

A.2.4 Solution Development

A decision tree was prepared to identify meters for replacement. The decision tree (which is illustrated in **Figure A.1**) provides a pragmatic approach to maximising meter life for large (32-150 mm) and small (20-40mm) meters. All water users greater than 65 megalitres per year (65ML/year) have meters verified every 12 months.

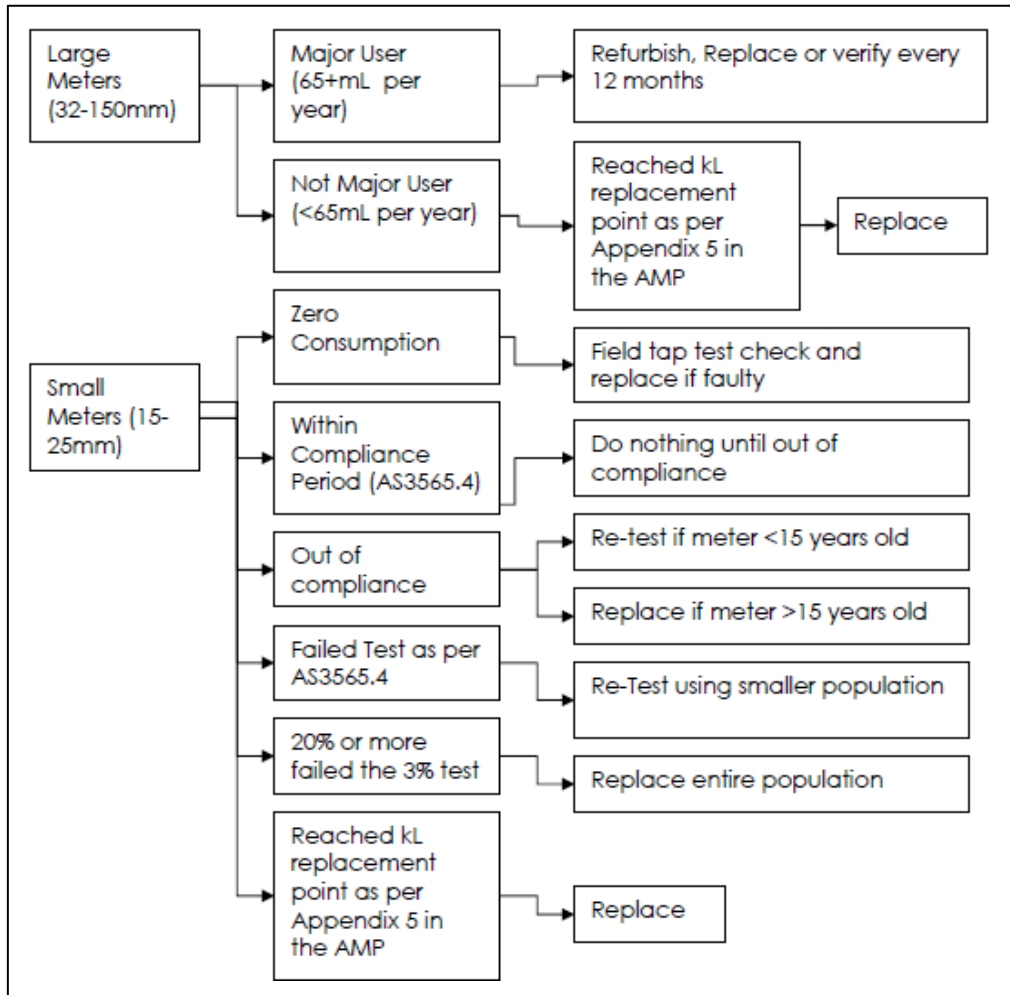


Figure A.1: Meter Replacement Decision Tree

The highest priority for replacement is given to meters with the highest potential for loss of revenue to QUU. The potential for loss of revenue is largely based around the consumption figures for the meter in question. This means that meters with higher consumption will be given priority over meters with lower consumption. Priority for replacement is also given to meters that have stopped (zero read meters), excess kilolitre based replacement (total flow registered) or age based replacement.

The program replaces the regularly failing manifold type meters (due to repeated failure of the isolation valve) with inline setups. According to the Business Case, the conversion will have no budgetary impacts due to the price for inline installations being near identical to the price of manifold base replacements. Furthermore, this initiative will provide Brisbane with a more economical replacement option in the future, as well as bringing Brisbane into line with the rest of South East Queensland and the vast majority of Australian capital cities.

The program also involves investigation of improvement opportunities including ways to drive efficiencies and improvements related to:

- Economic Replacement Points;
- Screamers and Plodders;
- High-End Water Consumers;
- Difficult to Access Meters;
- Zero Flow Data Gathering; and
- Sub-Metering and AMR Issues.

Small meter replacements are largely based on recommendations derived through AS3565.4 testing procedures. The Business Case states that the majority of meters marked for replacement within the next three years are 20mm AG and AZ type meters which failed AS3565.4 testing in 2010-11 financial year. Due to a very large number of AG and AZ meters requiring replacement, it was decided that the replacement be carried out over 3 years for AGs and 5 years for AZs in order to reduce large funding peaks and troughs. Priority is given to AG type meters which recorded higher average margin of error.

It is noted there are five (5) types of meters in operation. Testing is physically undertaken in a NATA accredited laboratory. The current testing laboratory (Banya Street Water Testing Workshop) will no longer be providing testing services and a new test laboratory will be required later in 2012.

A.2.5 Project Delivery

This project is being delivered under a three-year contract which was awarded in the 2010/11 financial year. The contract has been in place for less than one year of its three-year term; QUU has an option to extend the contract term by one year then a further one year (ie. 3+1+1). The same contractor also undertakes meter readings and any required maintenance.

Although the Business Case is based on like-for-like replacement, QUU advised that if a meter requires replacement, the contractor selects the new meter to be installed and usually supplies the cheapest model available from the market at the time. The meter is selected from a list of five (5) preferred suppliers, which was established through market engagement.²¹² QUU noted that 98 percent of small meters are supplied by two of the preferred suppliers and the volume of meters purchased allows the contractor to negotiate a competitive price for QUU.²¹³ According to QUU, these two suppliers have become suppliers of choice due to reliability and competitiveness.

QUU also noted during interviews that, ideally, they would prefer one type of meter for ease of maintenance, however, this introduces risk into the renewals program (ie. what if the selection of meters was susceptible to early failure). QUU indicated that it requires a balance between failure risk and not letting a single supplier dictate the market.

From Halcrow's perspective, it's not clear why the contractor maintains such a high control over meter selection even if cost savings are passed through to QUU. It is also not clear whether with in-line meter installation it is easy to interchange meter type. Given there is a preference for two (2) small meter types (of the five (5) types currently in operation), there may be an opportunity to formalise the preference for two or three proven meter types (and a range of test meters) through the negotiation of formal bulk supply contracts. This would drive cost savings from a supply perspective, and lead to the achievement of further efficiencies.

QUU also mentioned during interviews that it physically checks 15-20 percent of the work undertaken by its contractor.

QUU has identified a procurement risk resulting to the closing down of the Banya Street Water Meter workshop. Market research and selection of a new NATA laboratory for testing is yet to be completed, however, a forward approach has been planned.

A.2.6 Cost Estimate

The budgeted versus actual costs are shown in **Table A.3**. This shows that the actual cost of meter replacement (\$150 per unit) is \$20 less than the budgeted amount (\$170 per unit), as reported in the Business Case.

For 2012/13, the forecast amount shown in the Interim Price Monitoring Information Return is \$5,607,000. A request has been generated internally to bring forward \$2 million of expenditure to overcome the backlog of high priority work,²¹⁴ however, this has not yet been approved.

It is not clear as to what project QUU attributes its costs to check the contractor's work (some 15-20 percent of new/tested meters). It is assumed that efficiencies would be

²¹² Based on QUU response to Halcrow Draft Report, dated 9 November 2012.

²¹³ Based on QUU response to Halcrow Draft Report, dated 9 November 2012

²¹⁴ Based on the most recent Project Manager Report (August 2012).

gained by engaging the same contractor to read meters (under the same contract), however, Halcrow is unable to comment on this based on the information reviewed.

Table A.3: Budget versus Actual Costs – Brisbane Water Meters Renewals Program

Item	Budgeted cost in BC ^A for 2012-13 per meter	Budgeted cost in BC ^A	Actual cost used in Renewals Program List / meter	Actual cost used in Renewals Program List	Number of meters scheduled to be replaced/tested in 2012-13
20mm meter replacement (average for all 20mm meters)	\$170/meter		\$150	\$6,693,000* ^B	42,452 ^B
20mm meter testing (average for all 20mm meters)	\$210/meter		~\$80 ^C		
Large meter replacements	Variable			\$700,000	
Large meter testing				\$50,000	
Plodders and Screammers				\$20,000	
Trials of New Technology				\$50,000	
Meter Database				\$40,000	
Project Management				\$214,000	
Total		\$5,203,000^A	\$7,118,000	\$7,767,000	

Note:

^A Based on contracted Schedule of Rates for 2010-11.

* \$2 million dollars expenditure brought forward.

^A in program this is listed as \$5,767,000.

^B in program 42,452 meters are proposed to be replaced. At a cost of \$150ea, this should total \$6,378,800.

^C based on meter testing at Ipswich.

A.2.7 Implications for Operating Expenditure

One of the key drivers identified is “lost revenue”, however, none of the information reviewed provides an indication of the quantum of lost revenue associated with faulty meters. It is therefore not possible to gauge the level of savings.

A.2.8 Assessment of Prudence and Efficiency

Ongoing renewal of water meters is considered prudent, on the basis that statistics indicate that the meters are likely to be at fault. It would, however, be prudent for QUU to analyse real data associated with lost revenue prior to bringing forward the \$2 million of expenditure allocated for 2013/14 (as per the proposed variation identified in the August 2012 Project Manager Report) to relieve backlogged work. Any expenditure advancement should be justified on the basis of cost savings and maintenance savings over the longer term.

In regard to the existing contract, it is also difficult to agree that the current arrangements of sourcing multiple meter types based on what is cheapest on the market at the time is most efficient in the longer term. Halcrow suggests that options should be assessed to source one or two meter types under term supply contracts; such contracts would be based on a guaranteed quantity of meter purchase over (say) a minimum one year period. This approach would be expected to achieve savings (potentially in the order of 5 percent) in future years, whilst also providing consistency across QUU's portfolio of metering assets.

Halcrow recommends removal of the \$314,200 to reflect the difference between the unit cost shown in the Business Case and the actual unit cost incurred in the renewals program list (refer Section A.2.6), together with an ongoing efficiency saving of 5 percent to be achieved through the adoption of period supply contracts for a small number of preferred meter types.

A.2.9 Assessment of Reported Expenditure

In the supporting documentation for its Interim Price Monitoring Information Return, QUU has identified actual and proposed expenditure in respect of the Brisbane Water Meters Renewals Program amounting to \$22,141 million (\$nominal) over the five (5) year period 2010/11 to 2014/15, with \$5,607 million (\$nominal) forecast to be incurred in 2012/13. The proposed expenditure profile is shown in Table A.4.

**Table A.4: Actual and Forecast Capital Expenditure (\$'000 nominal)
- BDWDAA06 - Brisbane Water Meters Renewals Program**

Expenditure Profile (\$value)	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
QUU Forecast Expenditure Profile	3,754	4,555	5,607	4,139	4,086	22,141
Proposed adjustment	-	-	-314	-206	-204	-724
Halcrow Recommended Expenditure Profile	3,754	4,555	5,293	3,933	3,882	21,417

On the basis of the assessment outlined above, it is recommended that the forecast expenditure in 2012/13 and future years be reduced as shown in Table A.4.

A.3 BWWCAA03 - Brisbane Sewer Rising Mains Renewals Program

A.3.1 Project Description

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

The program is separated between two asset classes, including:

- 'Run to Fail' assets - rising mains with a diameter \leq 300mm; and
- 'Avoid Fail' assets - rising mains with a diameter $>$ 300mm.

For 2012/13, QUU proposes to deliver six separate schemes as part of the Brisbane Sewer Rising Main Renewals Program, including three schemes on 'run to fail' assets and three schemes on 'avoid fail' assets.

The 'run to fail' schemes, which involve the 'like for like' replacement of rising mains that have been subject to three or more failures in a rolling 12 month period, include:

- RM25 Scott Street, Norman Park;
- RM162 Jilba Street, Indooroopilly; and
- RM18 Carnelian Street, Holland Park.

The three 'avoid fail' schemes involve the proactive replacement of strategic sections of large diameter rising mains, including:

- RM86 Indooroopilly RM – high point replacement, due to corrosion;
- RM86 Indooroopilly RM – main river crossing; and
- RM10 Eagle Farm RM – rising main realignment.

A.3.2 Documentation Reviewed

Documentation reviewed in respect of this project included:

- *Sewer Rising Main Renewals Program; Program List; Financial Year 2012/13*, 3 April 2012;
- *Minor Capital Project Submission – Deflection of 1840Ø Rising Main – Eagle Farm Pump Station to Serpentine Road*, 13 April 2012;
- *Rehabilitation Submission – Indooroopilly Road Replacement of High Points on Rising Main*, 19 March 2012;
- *Minor Capital Project Submission – Indooroopilly Road Rising Main River Crossing Replacement/Rehabilitation*, 8 May 2012;
- *Rehabilitation Submission – RM18 Carnelian Street RM Replacement*, 29 November 2011;

- *Rehabilitation Submission – RM162 Jilba Street RM Replacement, 29 November 2011;*
- *Rehabilitation Submission – RM25 Scott Street RM Partial Replacement, 29 November 2011; and*
- *Brisbane Sewer Rising Main Renewals Program – PM Monthly Project Report, August 2012.*

A.3.3 Key Drivers and Obligations

For the ‘run to fail’ schemes, the primary driver for investment is the need to implement mitigation measures and environmental monitoring in accordance with the DERM licence/development permit, following multiple failures of the rising main which resulted in wastewater being discharged to the environment.

For the ‘avoid fail’ assets, structural condition of the asset and ongoing serviceability, assessed through visual inspection and ultrasonic thickness (UT) testing, is the key driver for investment on these assets.

A.3.4 Solution Development

Solutions for the ‘run to fail’ schemes generally involve the ‘like for like’ replacement of the failure prone rising main. Selection is based primarily on historic performance and failure history of that particular rising main. Approval is sought through a ‘Rehabilitation Submission’, where the scope is defined and costed. There was no evidence in the rehabilitation submissions to suggest that the longer term requirements had been considered in the development of the proposed solution, ie. whether the rising main sizing was appropriate for future requirements, or whether there was an alternative option available with a lower whole life cost. The scheme was driven purely by the short term need to reduce the frequency of rising main failures.

In order to develop a viable solution for the ‘avoid fail’ schemes, which are generally a proactive response to visual and UT inspections, a feasibility report is prepared, whereby a number of options are considered.

Halcrow reviewed the ‘minor capital project submissions’ for each of the three ‘avoid fail’ schemes proposed for delivery in 2012/13 and confirm that a number of renewal/reline/replacement options were considered by QUU, with the preferred option/s for each scheme summarised as follows:

- RM86 Indooroopilly RM – high point replacement:
 - Replacement of 250m of 24” ID Mild Steel Cement Lined rising main at two high points along the Indooroopilly Road rising main.
- RM86 Indooroopilly RM – main river crossing:
 - Reline the existing crossing using swage lining technology with PE pipes; or
 - Reline the existing crossing using slip lining technology with GRP pipes; or
 - Reline the existing crossing using pressure pipe CIPP technology with GR resin lining material.

NB: All options are technically feasible and of similar order of cost and will be considered during the procurement phase.

- RM10 Eagle Farm RM – rising main realignment:
 - Initial proposal to install a new spool piece of pipe with vertical bends to accommodate for ground settlement and lateral movement, but QUU subsequently decided to lower headstock on the piled section, which was a technically simpler solution than pipe replacement.

A.3.5 Project Delivery

The three ‘run to fail’ schemes will be delivered over two financial years, with preliminary works forecast for completion during 2012/13 and construction to be completed in 2013/14. QUU advised that the three schemes will be clustered and procured as a single contract. At the time of review, no milestones have been achieved.

The ‘RM86 - high point replacement’ project is being delivered through a construct only contract. Halcrow was advised that tenders had been received and were in the process of being evaluated by QUU. For the ‘RM86 – main river crossing’ project, the ToR is currently being prepared to undertake the detailed investigation, with detailed design to follow. Construction is due to commence in January 2013, with completion of both aspects forecast for May 2013.

For the ‘RM10 – rising main realignment’, QUU advised that the scope of work has been issued to a consultant for design, although a decision had not yet been made on the mode of delivery, ie. design and construct (‘D&C’) or construct only.

A.3.6 Cost Estimate

Estimated costs for each of the six schemes have been systematically built up using a ‘Minor Capital Project Submission Costing Sheet’, as summarised **Table A.5**.

Table A.5: Summary of Estimated Project Costs (\$'000 Nominal)

Item		RM25	RM162	RM18	RM86 High Point	RM86 Crossing	RM10
Procurement Costs		16	16	16			
Construction Costs		171	166	414	902	1,365	186
Mech & Elec Costs		10	10	12			
Other Costs – Land etc		32	38	38	65		
Contingency Allowance	Variable	53 (23%)	53 (23%)	110 (23%)	387 (40%)	409 (35%)	37 (20%)
Design	7%	20	20	41	95	124	15
Design Management	3%	8	8	18	46	61	8
Project Management	10%	28	28	59	154	202	25
Contract Management	5%	14	14	29	77	101	13
Corporate Overheads	14% of Mgmt costs	7	7	15	-	-	-
Total Estimated Cost		359	361	753	1,726	2,264	285
2012/13 Estimate (as submitted to QCA)		75	93	115	1,726	2,500	300

Halcrow found that the costs were generally based on generic unit rates and an estimated bill of quantities. For RM86 and RM10, estimated construction costs were either based on actual industry estimates acquired as part of feasibility, or (in the case of the high point project) based on similar work completed in Ipswich. Estimated costs have also been adjusted to allow for various QUU management costs; Halcrow found the percentage adjustments to be consistent with standard engineering practice.

QUU has also applied a variable percentage contingency adjustment to each of the six schemes, ranging from 23 percent to 40 percent. Whilst it is usual practice to include for contingency within project estimates, and the uncertainty of scope for the two RM86 'avoid fail' schemes supports the need for some contingency, Halcrow considers the assumed contingency allowance (\$1.05 million for 2012/13) to be overstated. This particularly applies to the more straight forward 'run to fail' and RM10 schemes, where the proposed scope is reasonably well defined and forecast to be delivered using established techniques. As the projects within this program are forecast to be predominantly delivered during the current year, there should already be a reasonable level of project definition, suggesting a contingency allowance of 10-15 percent would be more appropriate.

A.3.7 Implications for Operating Expenditure

Whilst the impact on operating expenditure on the smaller ‘run to fail’ schemes is not directly quantified within each rehabilitation submission, the need and ultimate delivery of each scheme is primarily driven by the historic number of rising main failures experienced. Consequently, the completion of these schemes should result in a reduction in maintenance costs in the short to medium term due to a probable reduction in the frequency of failures and the resultant reduction in emergency call outs and repairs.

For the larger ‘avoid fail’ schemes, where a minor capital project submission is completed, there is provision within the QUU template document for the consideration and assessment of the impact the proposed capital expenditure would have on operating costs. However, with the exception of the RM86 River Crossing scheme, the implications for operating expenditure have not really been considered or quantified. For the RM86 – River Crossing scheme, Halcrow saw evidence to confirm that direct project benefits (ie. reduced operating expenditure) have been identified and quantified, where an operating expenditure saving of \$80,000 per annum was identified as a result of reduced maintenance and condition assessment requirements. Halcrow considers that it would be reasonable to assume similar operating benefits are achievable from the other ‘avoid fail’ schemes.

A.3.8 Assessment of Prudence and Efficiency

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

Halcrow considers that QUU has adopted a sensible approach to program development, whereby a large number of different options have been considered for the ‘avoid fail’ schemes as part of the feasibility process. In addition, work on RM86 has been phased to ensure concurrent delivery of the various project packages, although it is anticipated that different contractors will deliver each package, resulting in duplication in set up costs, etc.

Whilst the cost estimates used to derive the scheme expenditure forecasts are detailed and relatively accurate for feasibility purposes, Halcrow considers the overall contingency allowance to be quite high and, as a result, efficiencies may be achieved during the procurement and delivery of the program. This particularly applies to the more routine ‘run to fail’ schemes where the scope is already well defined.

In recognition of these expected efficiencies, Halcrow recommends an adjustment to the 2012/13 expenditure forecast reflective of adjusting the contingency allowance to a maximum of 10 percent on the ‘run to fail’ schemes and 25 percent on the ‘avoid fail’ schemes (15 percent on RM10). On this basis, the forecast expenditure in 2012/13 should be reduced by circa \$345,000. Whilst QUU argues that the “*level of contingency for each project reflects the level of project and scope risk associated with each of the projects*” and has provided some justification for the allowances applied, Halcrow considers that the suggested revised contingency allowance, along with the ‘swings and roundabouts’

achieved in overall program delivery, should provide sufficient contingency to deliver the identified schemes.

A.3.9 Assessment of Reported Expenditure

In the supporting documentation for its Interim Price Monitoring Information Return, QUU has identified actual and proposed expenditure in respect of the Brisbane Sewer Rising Mains Renewals Program amounting to \$20.793 million (\$nominal) over the five (5) year period 2010/11 to 2014/15, with \$7.218 million (\$nominal) forecast to be incurred in 2012/13. The proposed expenditure profile is shown in Table A.6.

**Table A.6: Actual and Forecast Capital Expenditure (\$'000 nominal)
- BWWCAA03 - Brisbane Sewer Rising Mains Renewals Program**

Expenditure Profile (\$value)	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
QUU Forecast Expenditure Profile	245	970	7,218	3,282	9,078	20,793
Proposed adjustment	-	-	-345	-	-	-345
Halcrow Recommended Expenditure Profile	245	970	6,873	3,282	9,078	20,448

There appeared to be a high level of variance between the forecast 2012/13 expenditure (\$7.218 million) and the forecast 2012/13 expenditure reported in the QUU Renewals Program – Program List (\$4.809 million). QUU subsequently confirmed that the variance (\$2.409 million) is based on the fact that the forecast shown in the Information Return also includes carryover expenditure for Stage 2 of RM86 project, which involves renewal of the rail crossing element of RM86. Information to support the prudence and efficiency of the \$2.409 million carryover has not been reviewed in detail, although Halcrow understands from the ‘post market submission’ that the contract was novated from Brisbane City Council to a private contractor where the lowest cost tender was selected.

On the basis of the assessment outlined above, it is recommended that the forecast expenditure in 2012/13 be reduced by \$345,000. The proposed adjustment is shown in Table A.6.

A.4 BWWCAA06 - Brisbane Sewer Pump Stations Renewals Program

A.4.1 Project Description

The Brisbane Sewerage Pumping Station (SPS) Renewals Program is a rolling program of civil, mechanical and electrical refurbishments, undertaken in order to maintain the operational performance of the 199 SPS located within the Brisbane metropolitan area, and proactively reduce the risk of service failure.

For 2012/13, QUU proposes to undertake refurbishment work on eleven (11) separate SPS, summarised as follows:

- Gibson Island WRP – refurbish pump inlet suction pipe;
- SP10 Eagle Farm – replace 3No. variable speed drives on dry well pumps;
- SP193 Sandgate – replace 2No. variable speed drives on pumps 1 & 3 – subsequently abandoned (see below);
- Hamilton-Cowper Syphon – replace switchboard and tunnel lighting;
- SP7 Ferol Avenue – replace existing split case pump with non-clogging pump;
- SP16 Gordon Street – replace 2No. existing split case pumps with non-clogging pumps;
- SP18 Carnelian – replace 2No. existing split case pumps with non-clogging pumps;
- SP174 Jesmond Road – replace 2No. existing pumps;
- SP218 Westlake Drive – pump replacement (2011/12 carryover);
- SP58 Townsend Street – pump replacement (2011/12 carryover); and
- SP11 Caswell Street – install LV switchboard, new transformer and cabling (2011/12 carryover).

A program budget of \$4.119 million has been forecast for spend in 2012/13.

A.4.2 Key Reference Documentation

Documentation reviewed in respect of this project included:

- *Sewerage Pump Stations; Renewals Program List; Financial Year 2012/13*, 20 January 2012;
- *Rehabilitation Submission for Rolling Program – Gibson Island WRP Pump Suction Pipe Replacement*, 31 October 2011;
- *Rehabilitation Submission for Rolling Program – SP10 Eagle Farm Variable Speed Drive Replacement*, 22 September 2011;
- *Rehabilitation Submission for Rolling Program – SP193 Sandgate Variable Speed Drive Replacement*, 13 October 2011;
- *Rehabilitation Submission for Rolling Program – Hamilton-Cowper Syphon Switchboard and Tunnel Light Replacement*, 19 October 2011;

- *Rehabilitation Submission for Rolling Program – SP7 Feral Avenue Pump Replacement, 27 October 2011;*
- *Rehabilitation Submission for Rolling Program – SP16 Gordon Street Pump Replacement, 27 October 2011;*
- *Rehabilitation Submission for Rolling Program – SP18 Carnelian Street Pump Replacement, 27 October 2011;*
- *Rehabilitation Submission for Rolling Program – SP174 Jesmond Road Pump Replacement, 27 October 2011;*
- *Rehabilitation Submission for Rolling Program – SP218 Westlake Street Pump Replacement, 22 March 2011;*
- *Rehabilitation Submission for Rolling Program – SP58 Townsend Street Pump Replacement, 22 March 2011;*
- *Rehabilitation Submission for Rolling Program – SP11 Caswell Street New Transformer and LV Switchboard, 16 March 2011;and*
- *Brisbane Sewer Pump Station Renewals Program – PM Monthly Project Report, August 2012.*

A.4.3 Key Drivers and Obligations

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

- Health & Safety;
- Failure frequency;
- Asset condition and age;
- Technical obsolescence of equipment; and
- Maintenance and operating costs.

For each project included in the 2012/13 program, the following drivers have been identified:

- Gibson Island WRP – environmental quality compliance;
- SP10 Eagle Farm – obsolescence of equipment and long lead time for replacement;
- SP193 Sandgate – obsolescence of equipment and long lead time for replacement;
- Hamilton-Cowper Syphon – obsolescence of equipment – non-standard;
- SP7 Feral Avenue – increased maintenance requirement through blockages, causing risk to environmental quality compliance;
- SP16 Gordon Street – increased maintenance requirement through blockages, causing risk to environmental quality compliance;
- SP18 Carnelian – increased maintenance requirement through blockages, causing risk to environmental quality compliance;

- SP174 Jesmond Road – growth;
- SP218 Westlake Drive – deteriorating pump efficiency and increased maintenance;
- SP58 Townsend Street – deteriorating pump efficiency and increased maintenance; and
- SP11 Caswell Street – obsolescence of equipment.

A.4.4 Solution Development

The SPS Renewals Program defined for 2012/13 predominantly involves the 'like for like' replacement of mechanical and electrical (M&E) equipment that has either failed or is reaching the end of its design life.

Due to the routine nature of the program, generic business cases have been prepared which describes the background, scope and cost of the proposed works. We are content with the governance processes in place to escalate these maintenance issues to the capital program.

A.4.5 Project Delivery

At the time of review, progress against each of the projects within the 2012/13 SPS renewals program is summarised as follows:

- Gibson Island WRP – Pre Market Appraisal completed;
- SP10 Eagle Farm – Tender submissions have been received and are currently being evaluated; post market submission in the process of being drafted;
- SP193 Sandgate – Project abandoned as renewals already being delivered as part of BWWCAA08;
- Hamilton-Cowper Syphon – Design of bends complete. Design of siphon ongoing;
- SP7 Ferol Avenue – ToR submitted to Panel contractors;
- SP16 Gordon Street – No progress to date;
- SP18 Carnelian – No progress to date;
- SP174 Jesmond Road – No progress to date;
- SP218 Westlake Drive – Replacement pumps awaiting installation;
- SP58 Townsend Street – Replacement pumps awaiting installation; and
- SP11 Caswell Street – Design requirements being finalised.

A.4.6 Cost Estimate

Estimated costs for each of the eleven (11) schemes have been systematically built up using a 'Minor Capital Project Submission Costing Sheet', as summarised in **Table A.7**.

Table A.7: Summary of Estimated Project Costs (\$'000 Nominal)

Item (\$k)	Gibson Island	SP10	SP193	Hamilton Syphon	SP7	SP16	SP18	SP174	SP218	SP58	SP11
Consultant Report	48.0										
Construction Costs	62.0				5.7	5.7	5.7				30.0
M&E Costs	80.0	1,533.0	38.0	317.3			4.4	33.3	22.4	18.0	80.0
Pump Costs					18.0	21.0	21.0	103.4	71.9	33.7	
Controls Costs		150.0	4.0	10				16.9	1.9	2.8	
Contingency Allowance (20% unless stated)	104.5 (55%)	336.6	8.4	65.5	4.7	5.3	6.2	30.7	24.1 (25%)	11.0	21.0
Design (7%)	20.6	141.3	3.5	27.5	2.0	2.2	2.6	12.9	8.4	4.6	9.1
Design Management (3%)	8.8	69.1	1.7	13.4	1.0	1.1	1.3	6.3	4.1	2.2	4.5
Project Management (10%)	29.5	230.2	5.7	44.7	3.2	3.6	4.3	21.0	13.7	7.4	15.0
Contract Management (5%)	14.7	115.1	2.8	22.3	1.6	1.8	2.1	10.5	6.8	3.7	7.5
Corp Overheads (14% of mgt costs)	7.4	Allowance for corporate overhead included within the management costs detailed above									
Total Estimated Cost (\$k)	376.0	2,575.0	64.3	500.9	36.2	40.8	47.6	235.0	153.4	83.4	167.1
2012/13 Estimate	376.0	2,576.0	65.0	501.0	40.0	41.0	50.0	235.0	153.0	83.5	167.0

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

QUU has also applied a variable percentage contingency adjustment to each of the eleven (11) schemes, ranging from 20 percent to 55 percent. Whilst it is usual practice to include for contingency within project estimates, Halcrow queries the necessity to make such large provision for variance in what are routine renewals schemes, where the proposed scope and delivery method should be reasonably well defined, given the projects are forecast for delivery during the current year. In the case of Gibson Island WRP, a 55 percent allowance for scope and construction creep is considered to be in excess of that normally expected. Halcrow's review of that particular project proposal did not identify any engineering complexities that would warrant such a large allowance for variance.

In response to Halcrow's observations, QUU provided additional explanation to justify the contingency applied to each project. Whilst, the specific issues identified by QUU do reflect potential risks to delivery, the schemes are forecast for delivery during the current year and will need to be procured shortly. On this basis, Halcrow would normally expect the risks (as identified by QUU in their response) to already be incorporated into the project design/estimate, thereby reducing the need for a large contingency allowance. By not accounting for these known risks within the project design/estimate prior to procurement, QUU is increasing uncertainty and reducing the opportunity to deliver efficiencies through the procurement process.

A.4.7 Implications for Operating Expenditure

Whilst the impact on operating expenditure is not directly quantified within each rehabilitation submission, the need for and ultimate delivery of each scheme is primarily driven by the corporate desire to avoid unplanned failures of mechanical and electrical equipment within the network of SPS. Accordingly, the completion of these schemes should result in:

- a reduction in reactive maintenance costs in the short to medium term due to a probable reduction in the frequency of mechanical and electrical failures; and
- a reduction in the number of pollution events experienced, some of which may result in a fine being incurred.

A.4.8 Assessment of Prudence and Efficiency

In order to maintain the operational performance of the 199 SPS located within the Brisbane metropolitan area, and proactively reduce the risk of service failure, a rolling program of civil, mechanical and electrical refurbishments is both prudent and necessary.

QUU has adopted a systematic approach to the development of individual projects, based on condition monitoring (for 'avoid fail' assets) and asset performance (for 'run to fail' assets). Whilst the overall program appears to have been developed on an ad-hoc basis, based on individual business cases, Halcrow understands that actual measured asset condition and performance is used as a trigger to progress each business case. Notwithstanding this, for a routine but necessary program of this nature, Halcrow would expect to see evidence of a more holistic approach to program development and delivery that would enable QUU to better define the work in advance of delivery and also explore different delivery methods which would assist in improving the efficiency of delivery.

Whilst the cost estimates used to derive the program value are detailed and appear to be relatively accurate for feasibility purposes, Halcrow considers the overall contingency allowance to be quite high and as a result, efficiencies may be achieved during the procurement and delivery of the program. Furthermore, costs appear to have been developed using QUU day labour rates, which again limits the scope to improve efficiency of delivery.

In recognition of these expected efficiencies, Halcrow recommends an adjustment to the 2012/13 expenditure forecast reflective of adjusting the contingency allowance to a maximum of 10 percent on the 'like for like' mechanical and electrical replacement

schemes and 30 percent on the Gibson Island suction pipe replacement scheme. On this basis, the forecast expenditure in 2012/13 should be reduced by circa \$305,000.

A.4.9 Assessment of Reported Expenditure

In the supporting documentation for its Interim Price Monitoring Information Return, QUU has identified actual and proposed expenditure in respect of the Brisbane Sewer Pump Stations Renewals Program amounting to \$14.718 million (\$nominal) over the five (5) year period 2010/11 to 2014/15, with \$4.119 million (\$nominal) forecast to be incurred in 2012/13. The proposed expenditure profile is shown in Table A.8.

**Table A.8: Actual and Forecast Capital Expenditure (\$'000 nominal)
- BDWDAA03 - Brisbane Sewer Pump Stations Renewals Program**

Expenditure Profile (\$value)	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
QUU Forecast Expenditure Profile	1,371	926	4,119	4,100	4,202	14,718
Proposed adjustment	-	-	-305	-	-	-305
Halcrow Recommended Expenditure Profile	1,371	926	3,814	4,100	4,202	14,413

On the basis of the assessment outlined above, it is recommended that the forecast expenditure in 2012/13 be reduced by \$305,000. The proposed adjustment is shown in Table A.8.

A.5 BWWCAA08 - Brisbane Sewer Pump Station Reliability Improvement Program

A.5.1 Project Description

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

The program, which has been ongoing since 2007, was initially driven by the Brisbane Water target (carried on by QUU) of zero tolerance to dry weather overflows from SPS due to telemetry/mechanical failure. As a result of this, QUU has committed to deliver, on a prioritised basis (relating to 'time to overflow'), improvements to each SPS within the QUU network.

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

A.5.2 Key Reference Documentation

Documentation reviewed in respect of this project included:

- *Sewerage Pump Stations; Reliability Improvements Program List; Financial Year 2012/13*, 10 January 2012;
- *Sewerage Pump Stations Reliability Improvement Stage 1 – Feasibility Report*, 22 May 2005;
- *SPS Reliability Improvement Program Staging Document*, undated; and
- *Brisbane Sewer Pump Station Reliability Improvement Program – PM Monthly Project Report*, August 2012.

A.5.3 Key Drivers and Obligations

A major dry weather overflow incident at Heroes Avenue (SP103) Pumping Station due to multiple probe system failure, which occurred in 2005, triggered an enforcement order and subsequent management concern that Brisbane Water (the predecessor organisation to QUU) was potentially exposed to widespread dry weather overflow events due to sensor probe/relay failure, across the entire network of SPS in the Brisbane metropolitan area.

This resulted in an internal commitment by Brisbane Water to minimise the risk of dry weather overflows due to telemetry/mechanical failure from all SPS.

As such, the key driver for investment is environmental quality compliance, although the entire rolling program appears to be driven by a single failure event, which suggests corporate reputation is also a key driver.

Additionally, the electrical components/switchboards within each SPS are circa 10-25 years old, which is beyond the assumed design life of 10 years, and on this basis is in need of base maintenance expenditure, in order to maintain serviceability.

A.5.4 Solution Development

The multiple probe failure at Heroes Avenue SP103 and subsequent dry weather overflow event prompted the preparation of a Feasibility Report to ensure the reliability of all SPS across the Brisbane metropolitan area.

Halcrow confirms that Brisbane Water completed the Feasibility Report in 2005 and that there is evidence that a number of generic options were considered, including:

- Option 1 – Do Nothing – involving the continuation of the existing maintenance regime.
- Option 2 – Increase Probe and Wet Well Maintenance Frequency – this would enable the identification of possible failure mechanisms such as fat build up and also ensure regular manual testing of probes was completed.
- Option 3 – Generate high reliability design of telemetry, audit each SPS and define a rolling program of improvements – this is a fail safe approach to minimising risk of dry weather overflows from SPS.

Due to the desire for zero tolerance to dry weather overflows from SPS due to telemetry/mechanical failure, Option 3 was the only option considered viable, and the following scope of work was defined for each SPS:

- Provision of emergency high level probe detection system, with fail safe back up probe;
- Upgrade control systems to ensure control system redundancy, with manual control ability and replacement motor starters;
- Replace elements of the telemetry system with poor reliability elements; and
- Update communication devices to ensure faster response.

QUU proposes to investigate and deliver telemetry/mechanical improvements to all SPSs across the Brisbane area on a prioritised basis.

In the process of preparing the feasibility report, QUU has developed a detailed risk register and sought to identify and mitigate any risks to project delivery.

A.5.5 Project Delivery

As highlighted above, QUU proposes to investigate and deliver telemetry/mechanical improvements to all SPSs across the Brisbane metropolitan area, and has been delivering improvements on a prioritised basis since 2007.

At the time of review, improvements have been (or were in the process of being) delivered to 111 SPS, with a further 88 SPS still outstanding.

All SPS have been prioritised on the basis of the available storage at each site, whereby sites with a lower 'time to overflow' are given a higher priority. Similar types of SPS are then grouped together into small packages of work and separately procured.

For each package of work (typically containing between 1-15 SPS), a consultant is engaged to physically audit each site and prepare detailed site specific designs. These designs then form the basis of detailed scopes of work that are separately contracted for delivery.

For 2012/13, three packages of work (packages 9a, 9b/c and 9e) had carried over from 2011/12 and were in the process of being delivered. QUU advised that switchboards were in the process of being manufactured, with final delivery expected by October 2012. Civil construction work had also commenced on several sites, with completion forecast by year end.

For the actual twenty seven (27) outputs forecast for delivery in 2012/13, a consultant has been engaged to inspect each site and prepare site specific designs; at the time of review, site designs at eight (8) of the SPS had been completed. A construction contract is also out for tender for the first package of twelve (12) SPS, with appointment forecast for 31 October 2012 and delivery by March 2013.

Halcrow queried why the program was being delivered in small separate design and small separate construct packages of work and not bundled. QUU advised that the packages had previously been delivered on a design and construct basis, however, the electrical contractors who were competent in equipment supply were not competent in design and civil delivery, resulting in additional QUU design and management costs.

A.5.6 Cost Estimate

The forecast expenditure for the 2012/13 program of twenty seven (27) SPS was based on average historic costs achieved in the delivery of this rolling program over the previous five years. The forecast unit costs, which are inclusive of initial design cost and QUU management costs, are summarised as follows:

- \$125,000 is assumed for single pump SPS;
- \$135,000-\$145,000 is assumed for dual pump SPS; and
- \$300,000 is assumed for unusual/above ground SPS.

On the basis of the above rates, a program value of \$3.665 million is assumed for the 2012/13 defined outputs, with a further \$1.0 million committed in the delivery of the 2011/12 carry over packages (9a & 9b/c), some of which was incurred in 2011/12.

Whilst the 2012/13 packages of work are in the process of being procured, a total budget of \$4.198 million has been allowed for project BWWCAA08 within QUU's Information Return as submitted to the QCA.

A.5.7 Implications for Operating Expenditure

Within its Feasibility Report, QUU has considered the impact that the comprehensive upgrade of probe, controls and telemetry systems on their SPS network will have on operating expenditure, in terms of power costs, network costs, maintenance costs and incident response costs, although they have not quantified the operational benefit of completing the planned upgrade.

Whilst the upgrade of equipment and instrumentation will result in an increase in power consumption, Halcrow concurs with QUU's view that the increase will be negligible when compared to the overall cost of electricity at each SPS. QUU also considers that network operating costs will be unchanged. In terms of annual maintenance, Halcrow considers that savings should be achievable, in that the frequency of planned visits could be reduced from bi-annual to annual and the number of reactive visits should reduce significantly. Finally, the introduction of a reliable controls system will significantly reduce the risk of dry weather overflow and the costs associated with incident management, incident clean up and effluent tankering.

On the basis of the above, Halcrow is of the view that the proposed improvements should deliver a net reduction in annual operating expenditure.

A.5.8 Assessment of Prudence and Efficiency

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

The ongoing delivery of this rolling program demonstrates that QUU has a very low appetite for risk, in terms of both regulatory and reputational risk. Whilst total protection against asset failure is an aspirational target within a water business, and it is recognised that this program is a legacy issue reflecting a commitment made by a predecessor organisation prior to the formation of QUU, Halcrow does not believe it is prudent to systematically replace mechanical and electrical equipment on the basis of age and type, with limited regard to measured asset performance. Comprehensive replacement, regardless of performance, does not provide good value for money to its customer base. Halcrow believes that a more balanced approach should be considered, striking a balance between asset performance and cost. On this basis, it may be more prudent for QUU to maintain a regular monitoring and maintenance regime of its SPS network and proactively replace assets when the level of deterioration is demonstrable.

Furthermore, Halcrow does not consider QUU's current approach to program delivery to be efficient. Whilst the separate procurement of relatively small, design, supply and construct packages enables QUU to maintain control over delivery of the program and ensure delivery by specialist contractors, it is not conducive to driving efficiencies into the project delivery process. The separate tender for each package does not even ensure a consistent approach to delivery, as a variety of different contractors have historically been successful. Halcrow considers that a long term, reasonably well defined program of renewals would normally lend itself to a separately tendered, long term framework contract that would potentially introduce economies of scale through reduced procurement costs and lower unit costs due to the surety of work. QUU advised that D&C delivery mechanisms have previously been unsuccessfully used to deliver this program (hence the current approach), however, they are currently *"reviewing and revising its procurement and packaging arrangement to achieve improved efficiencies with regard to this project"*, which may deliver the potential benefits, as highlighted above.

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

Notwithstanding, a reduction in future expenditure to reflect expected efficiencies would be expected; accordingly, Halcrow recommends a nominal adjustment to the 2012/13 expenditure forecast of 5 percent to encourage the consideration of a different procurement strategy. On this basis, the forecast expenditure in 2012/13 should be reduced by circa \$210,000.

Halcrow also considers that an adjustment should be made to reflect the imprudent element of the work that has been undertaken. Whilst the life of the assets indicates that they are likely to be at or near the end of their design life, replacement should still be undertaken on the basis of condition/performance assessment. Given that (on the basis of the expenditure forecasts) the program is nearing completion, it could be assumed that those facilities now being upgraded present less risk of failure. Given that QUU has not demonstrated that full replacement is prudent, Halcrow proposes a further nominal 5 percent (\$210,000) adjustment to reflect the proportion of expenditure that is considered imprudent.

A.5.9 Assessment of Reported Expenditure

In the supporting documentation for its Interim Price Monitoring Information Return, QUU has identified actual and proposed expenditure in respect of the Brisbane Sewer Pump Stations Reliability Improvement Program amounting to \$11.103 million (\$nominal) over the five (5) year period 2010/11 to 2014/15, with \$4.198 million (\$nominal) forecast to be incurred in 2012/13. The proposed expenditure profile is shown in Table A.9.

**Table A.9: Actual and Forecast Capital Expenditure (\$'000 nominal)
- BWWCAA08 - Brisbane Sewer Pump Station Reliability Improvement Program**

Expenditure Profile (\$value)	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
QUU Forecast Expenditure Profile	3,615	3,290	4,198	0	0	11,103
Proposed adjustment	-	-	-420	-	-	-420
Halcrow Recommended Expenditure Profile	3,615	3,290	3,778	0	0	10,683

On the basis of the assessment outlined above, it is recommended that the forecast expenditure in 2012/13 be reduced by \$420,000. The proposed adjustment is shown in **Table A.9**.

A.6 BWWTAA01 - Brisbane Water Reclamation Plant Renewals Program

A.6.1 Project Description

QUU's East Operations Group (Brisbane) currently operates and maintains nine (9) wastewater treatment plants (WWTPs) whilst QUU West Operations Group (Ipswich, Lockyer Valley, Scenic Rim and Somerset municipalities) operates and maintains nineteen (19) WWTPs. The age of existing assets varies from 1 to 45 years. Most civil assets are still within their anticipated useful life, whereas a significant proportion of mechanical and electrical assets have exceeded their useful asset lives and are 25 to 40 years old. Obsolescence is an issue for the older mechanical and electrical equipment.²¹⁵

The following criteria are used for identification of projects under this renewal program:

- Operational costs;
- Obsolescence;
- Failure frequency;
- Condition; and
- Efficiency.

The projects included in the capital works program for 2012/13 are as follows; a selection of them is outlined briefly below:

- BWWTAA01A17 Brisbane Luggage Point WRP Cable Bitumen Junction Box (Electrical Reticulation);
- BWWTAA01A21 Brisbane Luggage Point WRP Gallery Aeration Distribution Switchboard (Electrical Reticulation);
- BWWTAA01A26 Brisbane Luggage Point WRP Effluent Switch Board (Electrical Reticulation);
- BWWTAA01A27 Brisbane Luggage Point WRP Sub 2 RMU Admin Building (Electrical Reticulation);
- BWWTAA01A28 Brisbane Gibson Island WRP RASB1 - Return Activated Sludge Pumps (Electrical Reticulation);
- BWWTAA01A40 Brisbane Luggage Point WRP Final Settling Tanks 1 to 8;
- BWWTAA01A41 Brisbane Luggage Point WRP Digester Roof Rehabilitation;
- BWWTAA01A67 Brisbane Luggage Point WRP Supernatant Pipe Replacement;
- BWWTAA01A68 Brisbane Luggage Point WRP Biogas Compressor Replacement;
- BWWTAA01A69 Brisbane Luggage Point WRP Spare Pumps Purchase;
- BWWTAA01A72 Brisbane Luggage Pt WWTP Dewatering Conveyor Renewal;

²¹⁵ 2012/13 Capital Investment Program, Renewals Project Summaries, updated 17 August 2012.

- BWWTAA01A73 Brisbane Luggage Point WWTP Removal of Redundant Equipment;
- BWWTAA01A74 Brisbane Wynnum WWTP Diffusers Replacement; and
- BWWTAA01A75 Brisbane Rocks Riverside Septic Tank and Wet Well Rehabilitation.

BWWTAA01A26 Brisbane Luggage Point WRP Effluent Switchboard (Electrical Reticulation)

This is an electrical project to replace switchboards, assess and upgrade earthing, install air conditioning/filtering and replace light weight ceilings and walls to create a sealed environment.

The Luggage Point Water Reclamation Plant (WRP) effluent switchboard is one of the three oldest switchboards at Luggage Point WRP. The switchboard was manufactured in 1975, making it 36 years old; it is no longer possible to procure replacement parts. The condition assessment indicates it has damaged earth bars. The most recent switchboard report, which found no fault, was conducted in the 1980s (whilst still within its serviceable life).

This project was costed in combination with two other projects (BWWTAA01A18 and BWWTAA01A21) as a single rehabilitation submission based unit on rates (\$780,000 nominal). According to QUU, BWWTAA01A18 was cancelled as future upgrade works in relation to this item were proposed; consequently the cost associated with this item (\$180,000 nominal) was removed from the renewals program.

BWWTAA01A41 Brisbane Luggage Point WRP Digester Roof Rehabilitation

There are six digesters at the Luggage Point WRP; they were originally installed in the 1970's. It was noted in 2010 that the digesters would require rehabilitation over the next few years.

There are noticeable leaks where methane gas is escaping from the digesters; unsuccessful efforts have been made in the past to seal cracks. The escaping methane is highly flammable and is increasing Luggage Point's greenhouse gas emissions.

BWWTAA01A75 Brisbane Rocks Riverside Septic Tank and Wet Well Rehabilitation

The WRP at Rocks Riverside contains a septic tank and wet well. The septic tank is a buried reinforced concrete box of 11.0 metres x 1.35 metres internal dimensions with two baffles 8.25 metres long x 200mm thick and a concrete top slab. The adjacent wet well is a reinforced concrete structure of 2.2 metres x 2.5 metres internal dimensions with Gatic covers. The effluent from the wet well is pumped to horizontal and vertical filter beds located for polishing.

The condition of these structures has deteriorated and they require rehabilitation. If rehabilitation is not completed, the risks are structural failure of the wet well and septic tank and an inability to supply the settlement ponds at Rocks Riverside.

A.6.2 Key Reference Documentation

Documentation reviewed in respect of this project included:

- *2012/13 Capital Investment Program, Renewals Project Summaries*, updated 17 August 2012;
- QUU Submission, *BWWTAA01A17 Luggage Point WRP - Replace 11 kV feeder No. 25*, 31 March 2011;
- QUU Submission, *Replace various Distribution Switchboards (BWWTAA01A18 Screen Area distribution switchboard, BWWTAA01A21 Gallery Aeration distribution switchboard, BWWTAA01A26 Effluent Pumping Station switchboard)*, 8 April 2011;
- QUU Submission, *BWWTAA01A27 Luggage Point WRP - Replace Substation No. 2*, 31 March 2011;
- QUU Submission, *BWWTAA01A28 Gibson Island WWTP - Replace RASB 1 switchboard 588*, 31 March 2011;
- QUU Submission, *BWWTAA01A40 Luggage Point WRP FST Stage 1 Weirs*, March 2010;
- QUU Submission, *BWWTAA01A41 Luggage Point WRP Rehabilitation of Digester Roof*, March 2010;
- QUU Submission, *BWWTAA01A67 Brisbane Luggage Point WRP Supernatant Pipe Replacement*, 6 April 2011;
- QUU Submission, *BWWTAA01A68 Brisbane Luggage Point WRP Biogas Compressor Replacement*, 24 October 2011;
- QUU Submission, *BWWTAA01A69 Brisbane Luggage Point WRP Spare Pumps Purchase*, 1 November 2011;
- QUU Submission, *BWWTAA01A72 Brisbane Luggage Pt WWTP Dewatering Conveyor Renewal*, 12 December 2011;
- QUU Submission, *BWWTAA01A73 Removal of Redundant Equipment at Luggage Point WRP*, 6 December 2012;
- QUU Submission, *BWWTAA01A74 B Wynnum Diffusers Replacement*, 13 November 2011;
- QUU Submission, *BWWTAA01A75, Wet Wells Rehabilitation Rolling Programme, Rehabilitation of WRP Septic Tank and Wet Well at Rocks Riverside*, 22 January 2010;
- QUU, *Waste Water Treatment Plant, Renewals Program List, AWWTAA01 2012/13*; and
- QUU, *PM Monthly Project Report*, August 2012.

A.6.3 Key Drivers and Obligations

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

- Ensure that the useful asset life of infrastructure is reached;
- Replacement/rehabilitation of the wastewater treatment assets to address safety, maintainability, operability, obsolescence, environmental and/or financial drivers;
- To maintain sewerage provision in accordance with relevant Reliability Standards;
- Ensure compliance with Environmental Licence Conditions;
- Maintaining WWTP reliability and performance; and
- Economic benefit.

Targeted renewal of WWTP infrastructure is required to ensure that the plants continue to operate reliably and efficiently whilst meeting environmental licence requirements.

A.6.4 Solution Development

According to QUU, BWWTAA01 is a rolling program for the rehabilitation of assets at water reclamation plants. Projects are identified and prioritised on the basis of performance, condition of asset and risk assessment. In some cases, infrastructure identified for rehabilitation will require upsizing to service population growth.

Business Cases have been provided for all projects. A sample of project Business Cases was selected and a detailed review undertaken, as outlined below.

BWWTAA01A26 Brisbane Luggage Point WRP Effluent Switchboard (Electrical Reticulation)

QUU, in its initial submission, identified the following scope of work for this project:

- Replacement of the existing switchboards;
- Assessment and upgrade of inadequate earthing;
- Assessment and upgrade of inadequate Multiple Earth Network (MEN) points;
- Installation of air conditioning/active carbon filtering to protect the switchboard from sewerage gas and dust; and
- Installation/replacement of lightweight ceilings and walls to form a sealed environment around the switchboard where practicable.

BWWTAA01A41 Brisbane Luggage Point WRP Digester Roof Rehabilitation

A condition assessment of the Luggage Point WRP Digester Roof undertaken in August 2009 identified that:

- all digester lids are leaking;
- Digester 1 has corroded inspection hatch;
- Digesters 2 and 4 have into previous applied insulation; and
- Digester 6 has a corroded gas dome.

The scope of work subsequently identified for this project comprised:

- Stage 1:
 - Internal inspection of Digester 4; Digester 4 will be taken offline for maintenance during the 2010/11 financial year;
 - Determination the internal and external rehabilitation solutions;
 - Rehabilitation of Digester 4, which may include:
 - Coating the external roof;
 - Crack and joint repairs; and
 - Concrete rehabilitation inside roof;
 - Replacement deteriorated digester lid fittings.
- Stage 2:
 - Rehabilitation of Digesters 2 and 5 as determined in stage 1
 - Replacement of deteriorated digester lid fittings

BWWTAA01A75 Brisbane Rocks Riverside Septic Tank and Wet Well Rehabilitation

The scope of this project comprises rehabilitation of the 11 x 1.35 metre septic tank and 2.2 x 2.5 metre wet well at Rocks Riverside Park. The following work is envisaged in the rehabilitation submission:

- Bypass and flow control measures;
- Detailed condition assessment;
- Rehabilitation of the wet well and septic tank; and
- Installation of a wet well drop pipe.

Without rehabilitation the identified risks were:

- Structural failure of the wet well and septic tank; and
- Inability to supply settlement ponds at Rocks Riverside.

A.6.5 Project Delivery

Project renewals submissions have been prepared by QUU and in all cases have received approval for inclusion in the renewals program.

The Luggage Point WRP Digester Roof Rehabilitation project has gone to open market for tender and, at the time this report was being prepared, QUU was in the process of assessing the tenders received.

For project BWWTAA01A75, the Brisbane Rocks Riverside Septic Tank and Wet Well Rehabilitation, the project submission suggests that a contractor has been asked for a quotation and will be directly engaged. A project/program management consultant was also engaged to provide cost estimates.

QUU advised that, where appropriate, projects are packaged for implementation under contract, thereby realising any potential efficiency gains. An example of this approach is the Luggage Point WRP Biogas Compressor Replacement project (BWWTAA01A68).

A.6.6 Cost Estimate

BWWTAA01A26 Brisbane Luggage Point WRP Effluent Switchboard (Electrical Reticulation)

It is not clear where the item rates for costing of the switchboard were sourced from. It is noted, however, that the effluent switchboard (BWWTAA01A26) and gallery aeration switchboard (BWWTAA01A21), which are similar systems, have been priced equivalently; this is both appropriate and consistent.

It is noted that civil construction costs (\$50,000), contingency (20 percent, ie. \$102,000) and overheads (\$168,000), a total of \$320,000, were originally apportioned to three packaged projects. As the scope of work has now changed such that only two projects are being delivered, an amount representing approximately one third of this total, ie. \$106,000 should be deducted from BWWTAA01A26 and BWWTAA01A21 (\$53,000 each).

No post-market submissions have been reviewed in respect of this project.

BWWTAA01A41 Brisbane Luggage Point WRP Digester Roof Rehabilitation

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

QUU has separately provided a cost estimate for rehabilitation of two of the digester roofs. The cost estimate is to based in recent tender rates for a single digester roof renewal, however, Halcrow has not sighted the tender assessment.

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

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

BWWTAA01A75 Brisbane Rocks Riverside Septic Tank and Wet Well Rehabilitation

The submission includes an early cost estimate of \$150,000. Attached to the early submission is a report on the assessment construction costs prepared by a project/program management consultant. The report indicates that the base estimated construction cost was \$247,712, which combined with a total risk and contingency allowance of \$37,157 gives a total project cost of \$284,869. The construction period was identified to be approximately twenty (20) working days (four (4) weeks) based on a 5-day working week.

A revised cost estimate, which incorporated the consultant's²¹⁶ estimate of \$285,000 for construction costs, was then prepared by QUU. QUU has updated their minor capital project costing spreadsheet to include an additional 20 percent construction contingency, which is excessive when a contingency allowance of 15 percent has already been incorporated into the project cost estimate.

QUU has applied their standard 3 percent design management cost (\$11,696), 10 percent project management costs (\$38,988) and 5 percent contract management cost with a further 14 percent overhead cost on top of the above applied.

A.6.7 Implications for Operating Expenditure

Although not immediately apparent in the submissions, during interview QUU raised the issue of rising maintenance costs and the fact that these are being weighed into the decision of whether to repair or replace components. An example of this is the BWWTAA01A68 Brisbane Luggage Point WRP Biogas Compressor Replacement, where maintenance costs exceed replacement costs.

A.6.8 Assessment of Prudence and Efficiency

In the sample of three projects reviewed by Halcrow, it is clear that there is a need for renewals to be undertaken on these assets. QUU has also demonstrated prudence in project selection, and in delaying renewals where future upgrades are planned.

There is, however, little evidence to suggest that cost efficiency is being achieved for the three sample projects.

Halcrow recommends that \$53,000 be deducted from each of projects BWWTAA01A26 and BWWTAA01A21. The reasoning is these projects were planned to be completed as a package with BWWTAA01A18. As this later project is not now proceeding, associated civil construction costs, contingency and overheads should also be removed (on a proportional basis).

As it is planned that two digester roofs are renewed under project BWWTAA01A41, there would be a saving compared to the reference project due to 'economies of scale'. It is expected that savings in the order of 10 percent for undertaking both projects concurrently, as previously outlined. In addition to achieving cost efficiencies, this

²¹⁶ The project/program management consultant provides cost estimation services; a reasonable degree of accuracy is expected for their estimates.

approach would also reduce digester downtime. Overall it is estimated that savings in the order of approximately \$93,117 could be achieved.

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

Table A.10 provides a summary of calculated deductions, based on redundant scope or excess contingency having been factored into projects. Project that were not reviewed have had a recommended global 5 percent (minimum) deduction applied on the basis of the savings identified in respect of the sample of projects reviewed.

Table A.10: Summary of Proposed Expenditure Reductions

QUU Project ID	QUU program list	Calculated deduction (\$)	Recommended percentage deduction	Recommended deduction (\$)	Reason
BWWTAA01A17	40,000		5.0%	2,000	
BWWTAA01A21	300,000	53,000	16.0%	48,000 [#]	Removal of scope associated with BWWTAA01A18
BWWTAA01A26	300,000	53,000	16.0%	48,000 [#]	Removal of scope associated with BWWTAA01A18
BWWTAA01A27	222,000		5.0%	11,100	
BWWTAA01A28	199,000		5.0%	9,950	
BWWTAA01A40	520,000		5.0%	26,000	
BWWTAA01A41	1,071,168	93,117	8.7%	93,117	Cost efficiencies achieved through delivering two roof projects
BWWTAA01A67	70,000		5.0%	3,500	
BWWTAA01A68	900,000		5.0%	45,000	
BWWTAA01A69	79,000		5.0%	3,950	
BWWTAA01A72	192,000		5.0%	9,600	
BWWTAA01A73	20,000		5.0%	1,000	
BWWTAA01A74	103,000		5.0%	5,150	
BWWTAA01A75	412,000	57,000	13.1%	53,928 [^]	Removed additional 20% contingency as project already 15% contingency included in estimate
Total	4,428,168		8.1%	360,295	

Notes:

[#] Based on revised calculations performed by QUU in its response to Halcrow draft report.

[^] Based on total project cost of \$358,441 referred to by QUU in its response to Halcrow draft report.

Overall it is recommended that BWWTAA01 - Brisbane Water Reclamation Plant Renewals Program is reduced by 8.1 percent (\$360,000) in 2012/13 and 5 percent in each year thereafter.

A.6.9 Assessment of Reported Expenditure

In the supporting documentation for its Interim Price Monitoring Information Return, QUU has identified actual and proposed expenditure in respect of the Brisbane Water reclamation Plant Renewals Program amounting to \$19.304 million (\$nominal) over the five (5) year period 2010/11 to 2014/15, with \$4.408 million (\$nominal) forecast to be incurred in 2012/13. The proposed expenditure profile is shown in Table A.11.

**Table A.11: Actual and Forecast Capital Expenditure (\$'000 nominal)
- BWWTAA01 - Brisbane Water Reclamation Plant Renewals Program**

Expenditure Profile (\$value)	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
QUU Forecast Expenditure Profile	2,687	2,913	4,408	4,666	4,630	19,304
Proposed adjustment	-	-	-360	-232	-232	-824
Halcrow Recommended Expenditure Profile	2,687	2,913	4,048	4,434	4,398	18,480

On the basis of the assessment outlined above, it is recommended that the forecast expenditure in 2012/13 and subsequent years be reduced as shown in Table A.11.

A.7 BWWTAA28 - Brisbane Gibson Island WRP - Sludge Dewatering Enhancement

A.7.1 Project Description

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

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

The project involves the 'like for like' replacement of existing BFPs with three (3) new BFPs and associated auxiliary equipment, capable of producing a dewatered sludge cake of 12-14 percent, each with a design feed of 24-31 kilolitres per hour and 1.5-2 percent solids.

A.7.2 Key Reference Documentation

Documentation reviewed in respect of this project included:

- *Gibson Island WRP Sludge Dewatering Replacement – Feasibility Report*, 20 October 2009;
- *Project Management Plan – Gibson Island WRP Sludge Dewatering Replacement*, 2 August 2011;
- *Post Market Appraisal – D&C of Gibson Island WRP Sludge Dewatering Replacement*, 5 August 2011; and
- *Gibson Island WRP Sludge Dewatering Replacement – PM Monthly Project Report*, August 2012.

A.7.3 Key Drivers and Obligations

The key driver for investment on this scheme is the need to maintain performance in order to ensure compliance with the plant licence effluent limits.

Additionally, the BFPs are circa 23 years old and are incurring significant levels of reactive maintenance expenditure in order to maintain performance. As such, the scheme is also driven by an efficiency driver as asset replacement will result in lower whole of life costs, through reduced operating expenditure.

Halcrow found that QUU has allocated the Growth driver to this expenditure. Halcrow does not, however, consider that the project is primarily driven by the need to provide additional processing capacity; it is driven by the need to maintain design performance, as described above, with potential growth in the catchment and the need to potentially produce additional sludge in the future due to increased loading as a secondary driver.

A.7.4 Solution Development

As highlighted above, the sludge dewatering facilities at Gibson Island WRP are nearing the end of their design life and have been deteriorating over a number of years. Replacement of the BFPs was initially proposed in 2009, when QUU (through its predecessor organisation Brisbane City Council) completed a feasibility report, whereby a number of costed options were proposed.

Halcrow undertook a review of the feasibility report, and confirm a number of options were considered, including:

- Option 1 – Do Nothing.
- Option 2 – New BFPs – Like for like replacement of existing BFPs in same building.
- Option 3 – Centrifuge – Replacement of existing BFPs with Centrifuge.
- Option 4 – GDD/BFP – Installation of gravity drainage decks and BFPs as a sludge thickening/dewatering process in a new building.
- Option 5 – GDD/BFP/Bioreactor Wasting – Installation of gravity drainage decks and BFPs as a sludge thickening/dewatering process in a new building and changing sludge wasting arrangement from activated sludge to bioreactor.
- Option 6 – GDD/BFP (Staged) – Stage 1 comprising replacement of existing BFPs in same building (as per Option 2), followed by Stage 2 comprising relocation of BFPs to a new building with gravity drainage decks and bioreactor (as per Option 5) should it be required.

Each option was assessed to determine the lowest whole life cost NPV, and Option 6 was considered to deliver the lowest short term capital cost and lowest NPV. It was considered that this option provided the best balance between up front capital cost and lower long term operating costs.

On the basis of the above, the scope of works to be delivered during 2012/13 includes:

- Decommission existing BFPs at Gibson Island WRP;
- Install new BFPs in existing sludge dewatering building;
- Upgrade the inlet works ventilation system; and
- Replace the return activated sludge switchboard.

If and when plant augmentation occurs in future years, Stage 2 will be implemented. This will involve the installation of gravity drainage decks and BFPs as a combined sludge thickening/dewatering process. These facilities will be constructed in a new building and will also involve changing the sludge wasting arrangement from activated sludge to bioreactor.

In preparing the project management plan, QUU has also developed a detailed risk register and sought to identify and mitigate any risks to project delivery.

A.7.5 Project Delivery

The scheme was procured through the Collaborative Delivery Initiative (CDI) whereby a design and construct contract was negotiated with a single supplier to deliver the agreed scope of works on a lump sum basis.

The CDI arrangement effectively hands over responsibility of delivery to a single supplier, who provides an open book assessment with three quotations for each component of the work. Through this process QUU was able to influence the type of equipment installed. For example, one brand of BFP was preferred to that initially offered by the supplier as the lowest cost, technically compliant BFP.

This delivery method provides QUU with an element of control without the overall responsibility for delivery and, whilst it does not guarantee the lowest cost option (although it does provide scope to negotiate down on costs), it ensures QUU has an asset that the organisation is comfortable with, reducing the overall whole life cost of the asset through reduced operating costs.

Furthermore, contracted supplier has completed other similar mechanical and electrical equipment contracts for QUU in the past, demonstrating a high standard of work on each occasion. This surety of delivery, combined with QUU's low appetite for risk in the delivery of their capital works program, makes procurement through the CDI a preferential approach.

At the time of review, Halcrow found that delivery of the BFPs was ongoing, with the scheme approximately 50 percent complete. Halcrow reviewed the latest PM monthly project report (August 2012) and found that site mobilisation had occurred, with completion forecast for February 2013. Whilst potential delays were being highlighted due to issues concerning the procurement of valves, mitigation measures were already being considered to ensure completion early in the New Year.

A.7.6 Cost Estimate

As part of the procurement process, an independent cost consultant was engaged to prepare a preliminary estimate of cost, based on a basic scope of works. This was then used as a benchmark during the negotiation process with the supplier to assess individual elements of the contract price and ensure a best value price was provided.

Following this process, further assurance of value for money was sought through the appointment of another independent third party estimator to review the supplier's offer. This independent review found the offer to be "*fair and reasonable for the documented scope of works and is in line with current market costs*".

On the basis of the above assessment, a final lump sum tender cost of \$4.372 million was agreed with the contracted supplier, which includes:

- \$4.060 million for the provision of the new BFPs;
- \$0.150 million for the inlet works ventilation system; and
- \$0.160 million for the RAS switchboard.

In addition to this, a 10 percent contingency of \$0.437 million was also included, resulting in a final estimated project cost of \$4.809 million.

A.7.7 Implications for Operating Expenditure

Within its Feasibility Report, QUU has considered the impact the replacement of the BFPs will have on operating expenditure. QUU anticipate that the operation and maintenance costs for sludge dewatering at the Gibson Island WRP will reduce by 5 percent following implementation, potentially increasing to a reduction of 48 percent following completion of Stage 2.

Additionally, the replacement of the BFPs will reduce the amount of sludge accumulated in the process and thus reduce the risk of being fined for exceeding the effluent suspended solids limit.

A.7.8 Assessment of Prudence and Efficiency

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

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

Halcrow also considers the procurement strategy to be appropriate for a risk adverse organisation like QUU. The CDI approach to procurement provides QUU with an element of control without the overall responsibility for delivery and, whilst it does not guarantee the lowest cost option, the open book assessment approach provides an arrangement under which QUU is able to negotiate scope and cost of individual elements, thereby ensuring that it is delivered with an asset that the organisation is comfortable with, whilst reducing the overall whole of life cost of the asset through reduced operating costs. Halcrow's review of the post market submission highlighted that post tender negotiation with the preferred contractor resulted in a further \$0.4 million reduction in the contract price, thereby improving the cost effectiveness of the scheme.

A.7.9 Assessment of Reported Expenditure

In the supporting documentation for its Interim Price Monitoring Information Return, QUU has identified actual and proposed expenditure in respect of the Gibson Island WRP - Sludge Dewatering Enhancement amounting to \$4.815 million (\$nominal) over the five (5) year period 2010/11 to 2014/15, with \$2.970 million (\$nominal) forecast to be incurred in 2012/13. The proposed expenditure profile is shown in **Table A.12**.

As noted above, however, there appears to be a high level of variance between the forecast 2012/13 expenditure reported in the Information Return (\$5.001 million) and the forecast 2012/13 expenditure reported in the latest PM update report (\$2.46 million).

**Table A.12: Actual and Forecast Capital Expenditure (\$'000 nominal)
 - BWWTAA28 - Gibson Island WRP - Sludge Dewatering Enhancement**

Expenditure Profile (\$value)	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
QUU Forecast Expenditure Profile	116	1,729	2,970	0	0	4,815
Proposed adjustment	-	-	-	-	-	-
Halcrow Recommended Expenditure Profile	116	1,729	2,970	0	0	4,815

On the basis of the assessment outlined above, it is recommended that the forecast expenditure in 2012/13 remain unchanged, as shown in Table A.12.

A.8 BWWTAA47 - Brisbane Oxley Creek WRP - Primary Digesters Environmental Improvements

A.8.1 Project Description

In 2005, the Oxley Creek Wastewater Treatment Plant (WWTP) received flow of approximately 58 megalitres per day (58 ML/day) from the S2 Brisbane catchment, producing effluent suitable for discharge to the Brisbane River that was compliant with the Environmental Authority (Licence) SR22030.²¹⁷ At the time there was a city strategy document that identified that waste should be treated as “*a resource for reuse rather than as an end product for disposal*”. Consequently, a feasibility study for the proposed upgrade of the Oxley WWTP complete in 2005 concluded that utilising the CAMBI process digesters would be adequate would help achieve the city’s vision.

The CAMBI wastewater treatment process is an anaerobic pre-treatment “activated sludge” thickening process. By reducing the volume of sludge through thickening, this leads to overall operational savings, enhanced treatment performance and allows reuse of the waste material.

Although the original (2005) project investigation was for upgrade of all four digesters, only two were upgraded in 2005/06; Digesters 3 and 4 were taken offline due to mechanical issues. Since original implementation in 2005/06, enhancements have been undertaken to Digesters 1 and 2 to facilitate better operation.

In 2009, flow to the Oxley Creek WWTP had increased to 67 megalitres per day. The CAMBI process had at that time been operational for 3 years and it had become apparent that the system would operate more adequately if three (3) digesters were on-line, leaving one off-line digester as redundancy. Without this project, the existing condition of Digesters 3 and 4 would not permit them to be brought on-line. This project is therefore a refurbishment project on Digesters 3 and 4 to bring them to a condition sufficient to allow operation, with an allowance for one redundant digester in the event of failure.

It should be noted that there is no record of structural inspections of the digesters or their domes having been undertaken during the period that the asset was operated by Brisbane City Council.

A.8.2 Key Reference Documentation

Documentation reviewed in respect of this project included:

- *2012/13 Capital Investment Program, Enhance Project Summaries*, updated 20 August 2012;
- *Oxley Creek WWTP Primary Digesters – Environmental Refurbishment Feasibility Report*, dated 20 April 2005;
- *Addendum to Oxley Creek WWTP Primary Digesters Environmental*;

²¹⁷ Brisbane Water, *Oxley Creek WWTP Primary Digesters – Environmental Refurbishment Feasibility Report*, 20 April 2005.

- *Refurbishment Report, Financial Year 2009/2010, Feasibility Study*, approved 17 November 2009;
- *Post Market Submission, Design and Refurbishment of the Primary Digesters at Oxley Creek Water Reclamation Plant*, dated 21 November 2011; and
- *PM Monthly Report August 2012. Brisbane Oxley WRP – Primary Digesters Environmental Improvements*.

A.8.3 Key Drivers and Obligations

The drivers listed in the Capital Investment Program for enhancement of Digesters 3 and 4 are related to:

- Reduce risk of a high consequence asset by:
 - Introducing redundancy;
 - Stabilising biosolids to reduce odour; and
 - Ensure mixing does not compromise digester performance;
- Reduce the volume of biosolids produced from Oxley Creek WWTP;
- Increase the potential for beneficial reuse of biosolids;
- Maximise the potential for power cogeneration; and
- Continue to meet the requirements of the SR2203 Environmental Authority (Licence) issued to Oxley Creek WWTP in relation to the release of noxious or offensive odours.

A.8.4 Solution Development

A feasibility report for the original upgrade of Digesters 1 and 2 was initially prepared by Brisbane Water in 2005. The report identified the project need, identified drivers and asset requirements and evaluated options. Options considered were:

- Option 1 – Existing Status, Operate Digesters in Current Condition;
- Option 2 – Cleanout and Maintenance of Digesters;
- Option 3 – Mixing Equipment Upgrade;
- Option 4 – Complete Digesters Refurbishment;
- Option 5a – Delayed Mixing Upgrade (equivalent scope as Option 3); and
- Option 5b – Delayed Complete Refurbishment (equivalent scope as Option 4).

Options were evaluated on the basis of risk, environment, capital costs and NPV. Options 1 and 2 were excluded from the analysis as they were considered non-viable and did not satisfy requirements for the digesters to operate on CAMBI sludge. On the basis of the options evaluation, Option 5a was subsequently selected.

Operating expenditure considerations for the project (demonstrated in 2005/06) included further utilising the CAMBI facility for cogeneration. With energy costs decreasing, total operating cost of the facility (at the time of the report) was expected to reduce from \$2.75 million (prior to CAMBI installation) to \$1 million in 2007 (\$nominal) and about \$0.625 million (\$nominal) by 2030.

It appears a decision was made in 2009 to bring Digesters 3 and 4 online with CAMBI process and to enhance/renew various aspects of Digesters 1 and 2; the explicit reason behind the timing of implementing CAMBI in Digesters 3 and 4 is, however, unclear. No further options related to making Digesters 3 and 4 operational are assessed, however, the work completed in the 2005 Business Case to establish the need for Digesters 3 and 4 is sufficient.

The 2009 report addendum identifies required scope and cost to do this work; hence project BWWTAA47 was initiated.

Information on the exact tendered scope of the upgrade was not available, however, from discussions with QUU, review of the Business Case and post market submission it appears that the original scope of BWWTAA47 involved:

- Enhancement of Digesters 3 and 4, comprising:
 - Replacement of existing spiral wound stainless steel gas ring main to seamless stainless steel ring main;
 - Inspection of domes;
 - Inspection to be carried out on the digester structure;
 - Testing and commission of mixing and heating system;
 - Change the sludge seal to water seal; and
 - Restoration of concrete chipping at telescopic valve pit (Digester 3 only).
- Enhancement of Digester 1, comprising:
 - Empty sludge;
 - Inspection of domes;
 - Inspection of structure;
 - Change the sludge seal to water seal;
 - Condition assessment (mechanical gas compressor, gas ring main, gas diffuser, telescopic valve, etc); and
 - Bring Digester 1 back online.

It is understood that the installation of a back-up heat exchanger was also required, however, this has been completed as a separate project.

Procurement of the enhancement works was undertaken as per the QUU Procurement manual and included non-price weighted criteria of service (30 percent), product (20 percent), delivery (20 percent) and offeror and viability requirements (30 percent); two tender submissions were received. Non-compliances were identified in both tender offers, however, QUU assessed that these were immaterial in determining the best-value for money offer.

The preferred contractor was rated higher against all criteria and was eventually awarded a contract for a final negotiated tender price of \$4,921,564 ex GST (\$2011/12). This is included a \$1,050,580 saving achieved through execution of this contract in tandem with the Flood Recovery Stage 2, Oxley Creek Water Reclamation Plant, Zone 3 (Stage 1) project. The saving was also possible as the preferred contractor had a site office setup and was also involved in the commissioning of the CAMBI heat exchanger that was excluded from this (BWWTAA47) enhancement project.

A.8.5 Project Delivery

The entire project has been procured over a long period of time (dating back to 2005). However, focussing specifically on the enhancement of Digesters 3 and 4, there have been some major delays.

The addendum to the feasibility study was completed in 2009. Design specifications originally scheduled for completion in October 2010 but were delivered 32 weeks late by QUU in May 2011. This may be in part due to the Brisbane floods in January 2011, which damaged part of the facility. This led to further delay of pre-market approval and consequently post market approval. The practical completion date in the post market submission is December 2012 (ie. a 48 week contract). Current estimated time of completion is, however, 4 weeks later, ie. January 2013.

Whilst the project was slow to commence, given flood damage, it is reasonable to expect some delay with this project. The major delay at the design specifications stage is not expected to have resulted in a financial impact.

The Project Manager Report indicates that issues related to HAZOP items required rectification. The exact detail related to this is unknown, however, according to the project manager, budget to rectify was not attributed to BWWTAA47 and therefore had no material cost impact.

A Toxic Gas Management Plan was also developed. This also appears to have had no cost impact on the project (ie. the cost was otherwise allocated).

It is noted, however, that the contractor has requested additional contingency of \$504,000 as its existing contingency budget has been utilised. No formal information in support of the contingency expenditure was reviewed, however, it may relate to preparation of the Toxic Gas Management Plan and possibly new guides being installed as part of the roof refurbishment. From meetings with QUU, it is understood that the lids of Digesters 1 and 2 needed to be removed, repaired and strengthened; this work is beyond the project scope identified in the 2009 addendum report. Issues with dome weight and stresses on guide rails were, however, noted.

A.8.6 Cost Estimate

The cost estimate presented in the 2005/06 feasibility study (completed independently by an appropriately experienced contractor) for complete refurbishment of all four digesters amounted to \$10.5 million.

The actual costs associated with refurbishing Digesters 1 and 2 and taking Digesters 3 and 4 offline were not available for review; it is not known who constructed the original digester upgrade.

In the 2009 addendum feasibility study, the cost estimate prepared by QUU appears to have been based on estimates in the 2005 report. It is unclear whether learning from the Digester 1 and 2 upgrades were incorporated into the estimate.

The cost estimate totalled \$2,578,000, of which \$2,538,000 relates to construction and the remaining \$40,000 relates to overhead costs. The \$2,538,000 construction cost comprises \$1,692,000 direct cost together with allowances of 25 percent for scope contingency, 15 percent for construction contingency and a further 10 percent for site preliminaries. Surprisingly, overhead costs (design costs, design management, project management and contract management) only represented some 1.5 percent of total cost, which is unusually low, even if design may have already been completed. The addendum report states “*The available budget for 2010-2011 financial years is \$2.5 million*”.

Once a request for tender went to market (as identified in the post-market submission), it became apparent that costs associated with the project would be higher, with the winning tender being some \$4,921,564 ex GST (\$2011/12) which is approximately double the estimated construction cost identified in the addendum report.

The post-market submission identifies that the 2010/11 spend was \$182,484, which presumably represents scoping and tender costs following the 2009 report. Total project funding at this stage was \$6,425,484. A total of \$5,734,000 was made available for contract provisions, including a provisional sum and contingency allowance (approximately 12 percent of the contract value).

The post-market submission also identifies “project contingency” of \$296,000, which together with the “contract contingency” of \$610,000 amounts to a total project contingency of \$906,000, ie approximately 14 percent of the total project cost. The estimated allowances for internal project management, contract management and operational support costs amount to \$387,484, ie. approximately 6 percent of total project cost.

QUU has provided the following explanations to justify the contingency allowance:

- “*The condition of the Digester lids at the time of awarding the contract was not known.*”
- “*The removal of lids 3 and 4 which have now been completed were full of surprises and could not have been foreseen due to all design drawings and documentation washed away in the flood.*”
- “*It is also to be noted and it was at the interview, that all 4 lids are different in design, therefore no baseline on strengthening and repair costs could be derived at the outset or when lids 1 and 2 were removed.*”
- “*Queensland Urban Utilities approach in strengthening and repairing of these lids is to ensure that on completion of these works, Oxley Creek can clearly have complete piece of mind, that all four digesters are now repaired to a standard which will ensure their longevity 15 years plus.*”

These explanations appear to be reasonable.

The total capital project summary identified the funding profile shown in **Table A.13**, which matches the post-market submission. No allowance appears to have been made for cost escalation over the period. The total project cost of \$6.425 million reported in the capital program summary aligns with that shown in the Interim Price Monitoring Information Return.

Table A.13: Project Funding Profile (\$'000 nominal)

	Prior Years	2011/12	2012/13	Future Years	Total
Project Cost	182	2,753	3,490	-	6,425

A.8.7 Implications for Operating Expenditure

Given that Digesters 3 and 4 are currently off-line, it is expected that there will be an increase in plant operating costs reflective of the ongoing operation of these assets. The benefits to be realised in respect of biosolids management and energy recovery will, however, result in overall operational savings for the plant.

Based on information presented in the 2005 feasibility study,²¹⁸ operating costs are expected to reduce from in the order of \$2.7 million per annum to \$1.0 million per annum (driven principally by changes to biosolids management) following commissioning of the refurbished digesters, with further reductions driven by energy recovery in future years.

A.8.8 Assessment of Prudence and Efficiency

The development of a solution to improve the treatment efficiency of the Brisbane Oxley Creek WRP is reasonable and prudent. It appears that the condition of the digesters was not well maintained prior to QUU operation. Given that Digesters 1 and 2 already operated on the CAMBI process, enhancing the offline Digesters 3 and 4 with the same process is also considered prudent.

It is a shortcoming of the addendum report that sufficient overhead costs were not appropriately allocated. Furthermore, it does not appear that information related to actual costs incurred in developing the original CAMBI project for Digesters 1 and 2 was effectively drawn on. This may have led to the construction cost estimate, prepared by Brisbane City Council at the time, equating to only half of the actual tendered price. It is therefore difficult to agree that this early stage of the project was executed efficiently. Timing delays during 2010 were also an issue; however, it is possible that these may have been in part related to the transition of asset ownership and operation from the Council to QUU in 2010 and the devastating flood effects of 2011.

The process followed for appointment of the contractor seems appropriate and QUU appears to have gained efficiencies from doing so. Once the project reached the post-market submission stage, QUU appears to have adequately and appropriately allocated overhead costs.

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

QUU has, however, improved its process over time and Halcrow considers the tail-end execution of this project in 2011/12 to have been efficient.

²¹⁸ Brisbane Water, *Oxley Creek WWTP Primary Digesters – Environmental Refurbishment Feasibility Report*, 20 April 2005, page 7.

A.8.9 Assessment of Reported Expenditure

In the supporting documentation for its Interim Price Monitoring Information Return, QUU has identified actual and proposed expenditure in respect of the Oxley Creek WRP - Primary Digesters Environmental Improvements amounting to \$6.425 million (\$nominal) over the five (5) year period 2010/11 to 2014/15, with \$3.490 million (\$nominal) forecast to be incurred in 2012/13. The proposed expenditure profile is shown in Table A.14.

**Table A.14: Actual and Forecast Capital Expenditure (\$'000 nominal)
- BWWTAA47 - Brisbane Oxley Creek WRP - Primary Digesters
Environmental Improvements**

Expenditure Profile (\$value)	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
QUU Forecast Expenditure Profile	182	2,753	3,490	0	0	6,425
Proposed adjustment	-	-	-	-	-	-
Halcrow Recommended Expenditure Profile	182	2,753	3,490	0	0	6,425

On the basis of the assessment outlined above, it is recommended that the forecast expenditure in 2012/13 remain unchanged, as shown in Table A.14.

A.9 IWWCAA30 - Ipswich Deebing Creek Sewer Trunk Main Augmentation – Stage 1

A.9.1 Project Description

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

Flow gauging undertaken within the catchment in 2008 confirmed a peak wet weather flow rate (PWWF) of 45 litres per second; a PWWF of 70 litres per second, based on the number of actual connections in the catchment (circa 2000), was assessed as at 2010. Based on Ipswich City Council population projections, an estimated ultimate PWWF of 140 litres per second is forecast for the Deebing Creek catchment, although this will not be realised in the near future due to a slowdown of the housing market in Ipswich.

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

A.9.2 Key Reference Documentation

Documentation reviewed in respect of this project included:

- *Ipswich Water – Feasibility Report of replacing B18 by gravity sewer*, February 2005;
- *Ipswich Council – Project Delivery Document SP13 to SP16 Trunk Sewer Upgrade*, October 2009;
- *Minor Capital Program Submission – Deebing Creek Sewer Trunk Main Augmentation*, December 2009;
- *Project Management Plan – Deebing Creek Sewer Trunk Main Augmentation*, 13 October 2011;
- *Post Market Appraisal – Deebing Creek D&C of a Trunk Main Sewer and Pumping Station*, 22 August 2011; and
- *Ipswich Deebing Creek Sewer Trunk Main Augmentation – PM Monthly Project Report*, August 2012.

A.9.3 Key Drivers and Obligations

There are a number of economic factors driving investment on this asset.

Due to the fact that actual PWWF exceeds the design capacity of SP13 by 50percent, growth is the primary driver for investment. As the pumping station has been subject to a number of wet weather overflows and pollution events in recent years, quality compliance is also a key driver for investment.

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

A.9.4 Solution Development

Capacity of the Deebing Creek Trunk Sewer collection system has been a long standing issue for QUU and its predecessor organisation, Ipswich City Council. The scheme was initially conceived in 2005 when a consultant was engaged to develop a number of costed options which were summarised in a resulting feasibility study, dated February 2005.

Halcrow sighted evidence to confirm that a number of options were initially considered, including:

- Retention and upgrade of the existing SP13 and augmentation of the existing trunk sewer network in order to meet current and future flow requirements.
- Bypass of the existing SP13, decommissioning of SP13 and construction of a gravity trunk sewer network involving deep tunnelled sections.
- Bypass of the existing SP13, decommissioning of SP13 and construction of a gravity trunk sewer network involving shallower sections, avoiding the need for tunnelling, but involving an additional crossing of Deebing Creek.
- Bypass of the existing SP13, decommissioning of SP13 and construction of a gravity trunk sewer network through the shallowest available route, but involving additional creek crossings and construction through forested areas.

In order to phase the timing of the upgrade, to account for the lower than projected growth rate, QUU will deliver the scheme in two stages. Stage 1 of the scheme, to be delivered in 2011/12 and 2012/13, involves the following scope:

- Construction of a new gravity sewer, comprising 520 metres of DN1050 pipeline, from SP13 to new temporary SPS;
- Construction of a new temporary SPS, with 2No. 140 litres per second capacity pumps (duty and standby);
- Construction of a temporary rising main, comprising 50 metres of DN355 PE pipeline from the new SPS to the existing trunk sewer; and
- Decommissioning of the existing SP13.

As growth forecasts are realised in future years, a new deep gravity sewer will be constructed. This deep sewer will link the Stage 1 gravity sewer with SP16, thereby eliminating the need for a pumping station within the Deebling Creek catchment.

In preparing the project management plan, QUU has also developed a detailed risk register and sought to identify and mitigate any risks to project delivery.

A.9.5 Project Delivery

The scheme is being delivered through a design and construct (D&C) contract. Halcrow reviewed the 'post market submission' prepared by QUU and found that compliant offers were received from eight (8) separate contractors. A lump sum price of \$4.3 million was accepted on the basis of a value for money assessment.

Within the post market submission Halcrow saw evidence of post tender negotiation in order to further reduce the tender price. Whilst the lump sum price provided by the preferred contractor was not the lowest compliant price received, Halcrow concurs with QUU's decision that was weighted by deliverability factors. The price was exclusive of GST and QUU overheads.

At the time of review, Halcrow found that the construction of the scheme was approximately 95 percent complete. Halcrow reviewed the latest PM monthly project report (August 2012), and found that completion of the mechanical and electrical aspects of the temporary pumping station and commissioning of the trunk sewer system was still outstanding. Whilst delays were being experienced on the electrical works, a project completion date of 31 October 2012 was still anticipated.

A.9.6 Cost Estimate

Taking into account the agreed lump sum D&C cost (\$4.26 million) and various QUU overheads and contingency allowances, the total estimated project cost and expenditure profile is summarised in Table A.15.

Table A.15: Estimated Cost and Expenditure Profile (\$'000 nominal)

	Forecast Expenditure 2010/11 (\$'000)	Forecast Expenditure 2011/12 (\$'000)	Forecast Expenditure 2012/13 (\$'000)	Total Forecast Expenditure (\$'000)
Project Management	145	95	23	263
Design Management	734	32	5	771
Commercial Services	19	52	3	74
Communications & Marketing	18	30		48
Field Services	75	60	34	169
Cultural/Heritage aspects	15	185		200
Design & Construction Contract		3,950	306	4,256
Contract Contingency		31	589	620
Project Contingency		10	40	50
Total	1,006	4,445	1,000	6,451

The cost estimate is inclusive of a 10 percent contingency allowance and 24 percent project related QUU costs, including 11 percent for design management.

According to the latest PM update, a final cost of \$5.52 million is anticipated, of which \$0.6 million is anticipated in 2012/13 (with \$4.92 million incurred to date). This is in contrast to the \$6.297 million reported in QUU's Interim Price Monitoring Information Return, and also in contrast with the \$1.000 million reported in the Project Management Plan, summarised in **Table A.15**.

A.9.7 Implications for Operating Expenditure

Whilst the impact on operating expenditure is not directly quantified within QUU's proposals, the delivery of the overall project will result in the replacement of SP13 with a gravity system, thereby removing all operations and maintenance expenditure associated with the operation of SP13. However, as the first phase of the scheme involves the construction of a temporary SPS, savings in operating expenditure are not immediately achievable.

The provision of increased capacity through the new section of trunk sewer will, however, reduce the risk of failure and in-system surcharge, thereby generating potential savings in reduced reactive maintenance.

A.9.8 Assessment of Prudence and Efficiency

On the basis that the Deebing Creek Trunk Sewer collection system is already under capacity and load within the catchment is forecast to increase as new development comes on line, augmentation of the trunk sewer network is considered to be both necessary and prudent.

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

Halcrow also considers the procurement strategy to be appropriate; the flexibility to accept the submission of non-compliant but appropriate solutions ensured that a best value, low cost option was delivered. Halcrow's subsequent review of the post market submission highlighted the fact that post tender negotiation with the preferred contractor further reduced the contract price, thereby improving the cost effectiveness of the scheme. In addition, QUU has undertaken a Net Present Value analysis which accounted for whole of life costs, and the final solution, which involves the abandonment of an existing pumping station, will further reduce the annual operating costs to the catchment, thereby ensuring that the solution is both efficient and cost effective.

As highlighted above, the cost estimate is inclusive of a 10 percent contingency allowance and 24 percent project related QUU costs, which include an 11 percent allowance for design management. On the basis that the contract was let on a design and construct basis, the level of the QUU design allowance seems to be disproportionately high, suggesting a higher level of QUU involvement in the delivery of the project than would normally be expected. This may be due to the fact there is

limited integration between the project planning and project delivery functions at QUU, resulting in duplication of effort.

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

A.9.9 Assessment of Reported Expenditure

In the supporting documentation for its Interim Price Monitoring Information Return, QUU has identified actual and proposed expenditure in respect of the Ipswich Deebing Creek Sewer Trunk Main Augmentation – Stage 1 amounting to \$5.791 million (\$nominal) over the five (5) year period 2010/11 to 2014/15, with \$1.000 million (\$nominal) forecast to be incurred in 2012/13. The proposed expenditure profile is shown in Table A.16.

**Table A.16: Actual and Forecast Capital Expenditure (\$'000 nominal)
- IWWCAA30 - Ipswich Deebing Creek Sewer Trunk Main Augmentation
– Stage 1**

Expenditure Profile (\$value)	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
QUU Forecast Expenditure Profile	546	4,245	1,000	0	0	5,791
Proposed adjustment	-	-	-	-	-	-
Halcrow Recommended Expenditure Profile	546	4,245	1,000	0	0	5,791

On the basis of the assessment outlined above, it is recommended that the forecast expenditure in 2012/13 remain unchanged, as shown in Table A.16.

A.10 IWWTAA23 - Ipswich Rosewood WRP Upgrade - Stage 2a

A.10.1 Project Description

The Rosewood Sewage Treatment plant (STP) was constructed in the 1960s and augmented in 1999. It has an intermittently decanted extended aeration process upstream of lagoons/constructed wetlands, chlorine contact tank and a recycled water pumping/tank system.²¹⁹ Present expectations of the Rosewood STP catchment is that it will grow significantly from an existing base of approximately 3,251EP to an ultimate capacity of 60,000EP by 2060.²²⁰

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

A subsequent review found that optimisation to 4,000EP capacity would serve the needs of the catchment until 2016. This is the limit to which the plant may be upgraded/optimised within its existing licence conditions. Revision of per capita inflows to 210L/EP/day, indicated that limiting unit processes were aeration, feed cycles, IAT decanting, the lagoons and wetland and the chlorine contact tank.

A staging strategy is been implemented which provides for optimising capacity of the existing STP up to 4,000EP by 2012 at the latest, subject to confirmation by the Department of Environment and Resource Management (DERM) and deferring major upgrade works until approximately 2016.²²¹ A major plant upgrade will then be required to provide for future population growth in around 2016/17.

A.10.2 Key Reference Documentation

Documentation reviewed in respect of this project included:

- *2012/13 Capital Investment Program, Enhance Project Summaries*, updated 20 August 2012;
- *Rosewood Sewage Treatment Plant Augmentation & Effluent Irrigation, Feasibility Study (Rev 2)*, SKM, dated 13 July 2009;
- *Addendum to Rosewood Sewage Treatment Plant Feasibility Study, Feasibility Report, Project Reference No. SNW00077*, approved 14 February 2011;
- *Post Market Submission, Design Rosewood STP Optimisation*, 10 February 2012;
- QUU, *Increase Contract Expenditure Authority, Rosewood STP Optimisation Stage 2A*; and
- *PM Monthly Report August 2012. Ipswich Rosewood WRP Upgrade – Stage 2a.*

²¹⁹ SKM, *Rosewood Sewage Treatment Plant Augmentation & Effluent Irrigation, Feasibility Study (Rev 2)*, 13 July 2009.

²²⁰ QUU, *2012/13 Capital Investment Program, Enhance Project Summaries*, updated 20 August 2012.

²²¹ Ibid.

A.10.3 Key Drivers and Obligations

The drivers for this project are primarily growth related. QUU would like to facilitate sustainable growth of the Rosewood STP catchment in accordance with the significant population increase in this area as defined in the SEQ Regional Plan. In doing this, QUU must comply with licence conditions and achieve Water Quality Objectives in accordance with the Environmental Protection Policy (Water).

QUU also has a commitment to achieving improved waterway health and agreed actions as defined in the SEQ Healthy Waterways Strategy and Point Source Pollution Management Action Plan.

With the planned upgrade, the system will operate within the design standards of QUU.

A.10.4 Solution Development

In 2008, prior to the formation of QUU, Ipswich Water commissioned a consultant to prepare the first of a series of studies related to the existing plant and effluent irrigation. By 2009, studies related to possible augmentation were underway with the first feasibility study completed in July 2009.

The early feasibility considered the following:

- two options for size, 7,500EP and 15,000EP;
- two options for different treatment levels of total nitrogen, ammonia and total phosphorus; and
- one option for agricultural irrigation reuse being 90% ADWF.

Initial capital costs associated with these projects (established in 2008) were between \$14.3 million and \$24.0 million (\$nominal), with operating costs between \$0.3 million to \$0.5 million (\$nominal).

An early risk assessment, including conduct of a stakeholder risk assessment workshop, was completed as part of the study.

As the population in the catchment was observed to be volatile, an addendum feasibility study was completed by QUU in 2011. Following assessment that the 4,000EP estimate would be suitable up to 2016, the preferred upgrade option as scoped in the addendum report incorporated the following measures:²²²

- Renewed aeration system and performance for the activated sludge process;
- Provision of mixers in the activated sludge tanks to improve the process performance;
- Renewed decanter mechanism and performance for the activated sludge process;
- Modifications to Lagoon 1 to form an effluent balancing basin to improve the effluent quality and to reduce flow peaks for disinfection;
- New chlorine contact tank and performance for effluent disinfection;

²²² *Addendum to Rosewood Sewage Treatment Plant Feasibility Study, Feasibility Report, Project Reference No. SNW00077*, approved 14 February 2011.

- Remedial works to allow the surface/ subsurface wetland system to function effectively and accept storm flows in excess of 3 x ADWF;
- Additional pipework to facilitate maintenance of the activated sludge plant and improve the operational flexibility of the lagoon/ wetland system; and
- Electrical and control system works for the new equipment and improve process control.

The feasibility study also identified inclusion of the following optimisation measures:

- Installation of a “Water Manager” to make recycle water more readily available to road tankers; and
- Improved thickening of the waste activated sludge to reduce the cost of transporting WAS to Bundamba STP.

According to QUU, various risks were still present in the feasibility study addendum including a major design risk (as the preferred option did not alleviate the process ‘bottle necks’ previously identified). To overcome this, the feasibility study recommended that a comprehensive review of the equipment vendor design and a thorough process and hydraulic review be undertaken.

In developing the option put forward in the addendum report, a number of assumptions were made with the aim of reducing capital costs including:

- construction of only one new structure (a chlorine contact tank);
- geotechnical information was not assessed, as this was not thought to be an issue;
- all works were within the site boundary;
- contaminated land and acid sulphate soil would be allowed for in the budget assessment;
- new design should take into account the history of flooding in the area;
- full survey would be required; and
- services survey and condition assessment to be undertaken prior to detailed design.

In August 2011, the pre-market submission was approved and the project request for tender issued in November 2011. Since this time the project has been referred to as “Rosewood STP Optimisation Stage 2A”. A risk register was included as part of the pre-market submission against which tenderers provided itemised costs.

Three offers were received which were judged on the basis of financial and non-financial criteria. The non-price weighted criteria included capability (25 percent), experience (25 percent), methodology (25 percent), quality, environment and EHS (15 percent and financial viability (10 percent). Clarifications were sought on all tenders with revised prices submitted and following negotiations, the project was eventually awarded to the preferred contractor who had the lowest price of \$3,734,375, achieved the highest value for money index, offered the most practical construction methodology and posed the shortest shutdown timeframe of nineteen (19) days.

A.10.5 Project Delivery

Design specifications were originally scheduled for delivery in February 2011, however, this was completed 32 weeks late in September. This delay is most likely a result of the January 2011 floods. Pre-market approval occurred some 84 weeks later than originally scheduled. Since then, progress has been made to expedite delivery, with the scheduled practical completion date currently on-track to be only thirteen (13) weeks later than originally planned.

The most recent Project Manager Report (dated August 2012) identifies major issues in respect of scope, time, cost and risk. The issues are related to unforeseen operational conditions being encountered on-site and the fact that Rosewood Golf Course is unable to be supplied with recycled water until the commissioning period is complete. During construction, it was identified that the lagoons were not operating correctly, which has created water quality issues and structural issues for nearby buildings. The core issue for the lagoons (related to a leaky pipe) has been resolved.

As a consequence of the issues identified during construction, an increase in contract expenditure authority was required. A submission was put forward to QUU's Chief Executive Officer in September 2012; this was subsequently approved.

Infrastructure construction has been completed and is currently undergoing commissioning. Stage 2b of the project is scheduled to commence in 2015/16.

It is also noted that the project was originally planned to be delivered under a design and construct contract, but was subsequently changed to construct only. A design consultant was engaged at a cost \$249,180 (2011/12).

A.10.6 Cost Estimate

The Project Manager Report and capital summary provide an indication of early costs associated with this project. Prior to 2011/12, when this project entered the pre-market stage, actual project expenditure had amounted to \$3,335,000.²²³ Halcrow notes that, whilst this expenditure is not directly related to the works that are the subject of this review, it is significant given that all work appears to be related to feasibility investigations.

The initial cost estimate in the feasibility addendum report prepared by QUU in 2011 was largely based on factoring with experience drawn from other projects; unit rates were not used in developing the cost estimate.²²⁴ The feasibility addendum report identifies construction cost as \$2,809,000 which included a 20 percent contingency. Design, management and overheads were estimated to be a further \$770,000 (27 percent of construction costs), such that the total estimated amount was \$3,579,000 with an accuracy of (+25%/-30%).

²²³ QUU has confirmed that this expenditure, incurred prior to the establishment to QUU, was early expenditure related to an investigation carried out for a \$35 million upgrade. The proposed upgrade was subsequently reduced to \$5 million for an interim stage (implemented prior to Stage 2a, which is the focus of this review) with the result being a deferment of capital expenditure.

²²⁴ In this study cost estimates were estimated as either class 3 (-20% to +25% accuracy, estimated from preliminary plan) or class 4 (-30% to +100% factored).

The addendum study states an assumption that detailed costs estimates will be developed later. It is also assumed in the feasibility report that competitive tendering in the open market will precede the appointment of a constructor/contractor and that the constructor/contractor will be experienced in this type of work.

As previously mentioned, construction costs following post-market submission were estimated to be \$3,734,375. Costs associated with risk items (submitted as part of the tender process) presented in Table A.17 were identified; this allowance then formed the contract contingency allowance.

Table A.17: Assessed Cost of Risk

Item	Description of Risk	Contract contingency + project contingency
D1	A need for a change in the designs is discovered during construction leading to additional design and contract management costs as well as possible delay costs payable to the contractor.	\$236,875
D2	Additional grit and sludge removal from IAT and DAT Tanks (assumptions have been made based on information from operations).	\$40,000
D3	Structural repairs due to condition of tanks once sludge and grit removal proceeds.	\$60,000
D4	Remedial works to the inlet structure due to insufficient freeboard.	\$150,000
D5	It is found that rock excavation will be required after contract commencement.	\$50,000
D6	A delay in the construction schedule due to unseasonal weather based on contractor delay rates of \$4,000 per day.	\$80,000
D7	Disposal of and or treatment of contaminated soil or other contaminated materials found on site leading to variations, delay rates and internal costs.	\$50,000
D8	Potential variations due to the unforeseen underground conditions and replacing existing pipes, valves and relocating unknown electrical services.	\$80,000
D9	Blockage of Lagoon 4.	\$127,000
D10	Lowering Levels of Lagoons.	\$100,000
D11	Trucking of Sludge to Bundamba.	\$180,000
D12	Additional Aeration Testing.	\$40,717
	Total	\$ 1,194,592

The Project Manager Report (August 2012) identified that increased scope related to de-sludging and rehabilitating the lagoons has resulted in additional expenditure of \$1.18 million.²²⁵

QUU's Increase in Contract Expenditure Authority (September 2012), identified that the original contingency risk amount of \$1,194,592 was fully expended and that there was still outstanding variations of \$1,164,034.44 pending. It is unclear whether the \$1,194,592 expended was related to all items D1 – D12 as shown in Table A.17. Regardless, it is clear the unforeseen circumstances on this project have required the full contingency amount plus an additional \$1,194,592.

The Submission revises the contract value upward by \$1,194,592 (equal to the original contingency amount), ie. from \$3,734,375 to \$4,928,967. An additional amount of \$1,671,034 is now required as contingency to cover design issues, latent conditions and operational issues.²²⁶ Variations totalling this amount have been submitted to QUU, however, are not yet approved. Overall the Contract Expenditure Authority Submission requests an increase of \$1,671,034 which represents a further 33.4 percent increase in expenditure.

Table A.18 shows a comparison of the feasibility addendum report cost estimate, the post-market assessment of costs and the current project forecast as reported in the Increase in Contract Expenditure Authority Submission.

Table A.18: Cost Estimate Comparison

Cost Component	Feasibility Addendum Report	Post-Market Submission	Increased Contract Expenditure Authority Submission
Construction contract	2,247,000	3,734,375	4,928,967
Contract contingency	561,800	1,194,592	1,671,034
Project contingency ^A		249,180	10,000
Internal, project and contract management, and operational support costs	770,000	294,853	60,472
Total	3,579,000	5,473,000*	6,670,473

Based on the Contract Expenditure Authority Submission, it appears that internal, project and contract management, and operational support costs have been reduced from \$294,853 to \$60,472, which is surprising given the complicated nature of this project. However, given the current stage of the project, QUU should have a good understanding of these management and support costs; accordingly Halcrow has not questioned why this figure was able to be revised.

²²⁵ Halcrow was unable to correlate the \$1.18 million additional expenditure to the post-market submission and Contract Authority Expenditure Increase Approval Submission (September 2012) as suggested by QUU.

²²⁶ Existing building structural issues are also being rectified. This is understood to be due to previous poor lagoon construction which caused soil saturation and differential settlement.

A.10.7 Implications for Operating Expenditure

Whilst operating costs appear to have been considered in the original feasibility assessment, the operating cost impacts associated with the works now being implemented have not been clearly identified. However, assessment of the scope of work being implemented to optimise operation of the existing treatment facility reveals that there is likely to be some movement in the nature of the expenditure incurred, which could be expected to impact the quantum of the total operating expenditure.

For example:

- Provision of mixers in the activated sludge tanks will incur additional power costs; and
- The provision of a new chlorine contact tank may result in increased chemical use, with the associated additional costs; whilst
- Improved thickening will reduce the cost of transporting waste activated sludge.

Given that the upgraded plant will be more appropriately sized to meet current demand, there may be operational savings associated with failure to meet discharge licence conditions.

A.10.8 Assessment of Prudence and Efficiency

There was some difficulty in appropriately scoping this project from when studies related to this project first began in around 2007 at Ipswich City Council. By revising design capacity and delaying upgrade until approximately 2017, QUU has shown prudence in attempting to delay expenditure of upwards of around \$20 million for the cost of a new STP. The difficulty, however, is striking the right balance so that upgrade works conducted on the existing STP may be incorporated into any future plant. It is not clear how the 2012 upgrade will interface with any future plant and this decision does not appear to have been factored into the enhancement of the existing plant such that it was capable of meeting a 4,000EP load.

The manner in which QUU has handled the procurement legacy project from Ipswich City Council is also prudent. In general, QUU has proven there is a need and engaged with stakeholders. It is clear how estimates were prepared and the foreseen risk items were calculated.

With respect to efficiency, without reviewing information in relation to expenditure in years prior to 2011/12, Halcrow is unable to draw a conclusion for this part of the project.

The delivery of the project since the variation report was prepared in 2011 appears to be efficient. The tender assessment process for the Stage 2a work appears to have been reasonable, with similar tender prices being submitted. This aspect of the process is considered to have resulted in efficient costs.

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

Overall, additional works funded through the contract contingency is very high. Some \$2,865,626 (\$1,194,592 plus \$1,671,034), which equates to 76 percent of the initial construction contract value of \$3,734,375, has been identified. QUU has, however, documented and justified the risks/additional scope incurred in undertaking the project.

Halcrow does, however, recommend an adjustment to expenditure in 2012/13 to reflect the decrease in spending associated with project contingency (originally \$249,180, later revised to \$10,000) and internal, project and contract management, and operational support costs (originally \$294,853 and later revised to \$60,472); this suggested decrease is equal to \$473,561 for 2012/13. It is also recommended that an adjustment to the 2013/14 forecast is made to reflect the required increase in expenditure of \$1,671,034²²⁷ for necessary additional works.

A.10.9 Assessment of Reported Expenditure

In the supporting documentation for its Interim Price Monitoring Information Return, QUU has identified actual and proposed expenditure in respect of the Ipswich Rosewood WRP Upgrade - Stage 2a project amounting to \$5,580 million (\$nominal) over the five (5) year period 2010/11 to 2014/15, with \$3,664 million (\$nominal) forecast to be incurred in 2012/13. The proposed expenditure profile is shown in Table A.19.

**Table A.19: Actual and Forecast Capital Expenditure (\$'000 nominal)
- IWWTAA23 - Ipswich Rosewood WRP Upgrade - Stage 2a**

Expenditure Profile (\$value)	2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
QUU Forecast Expenditure Profile	107	1,809	3,664	0	0	5,580
Proposed adjustment	-	-	-474	+1,671	-	+1,197
Halcrow Recommended Expenditure Profile	107	1809	3,190	1,671	0	6,777

On the basis of the assessment outlined above, it is recommended that the forecast expenditure in 2012/13 be reduced by \$474,000 and that an additional \$1,671,000 be included in 2013/14, as shown in Table A.19.

²²⁷ Being the difference between total expenditure \$6,670,473 earmarked in the Contract Authority Expenditure Authority Submission and the post market submission total of \$5,473,000.



Appendix B. Summary Assessment of Capital Expenditure

A detailed summary of Halcrow's assessment of capital expenditure is presented in this Appendix, as follows:

- Table B.1: Capital Program Assessment – Based on Sampled Projects; and
- Table B.2: Capital Program Assessment – Extrapolated Assessment.

Table B.1
QUU - Capital Program Assessment
Assessment Based on Sampled Projects

Project	QUU Project ID	Region		2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
Brisbane Water Reservoirs Renewals Program	BDWDAA04	Brisbane	QUU Forecast	82	1,090	4,653	1,557	1,595	8,977
			Proposed adjustment	-	-	-651	-	-	-651
			Halcrow Recommended	82	1,090	4,002	1,557	1,595	8,326
Brisbane Water Meters Renewals Program	BDWDAA06	Brisbane	QUU Forecast	3,754	4,555	5,607	4,139	4,086	22,141
			Proposed adjustment	-	-	-314	-206	-204	-724
			Halcrow Recommended	3,754	4,555	5,293	3,933	3,882	21,417
Brisbane Sewer Rising Mains Renewals Program	BWWCAA03	Brisbane	QUU Forecast	245	970	7,218	3,282	9,078	20,793
			Proposed adjustment	-	-	-345	-	-	-345
			Halcrow Recommended	245	970	6,873	3,282	9,078	20,448
Brisbane Sewer Pump Stations Renewals Program	BWWCAA06	Brisbane	QUU Forecast	1,371	926	4,119	4,100	4,202	14,718
			Proposed adjustment	-	-	-305	-	-	-305
			Halcrow Recommended	1,371	926	3,814	4,100	4,202	14,413
Brisbane Sewer Pump Station Reliability Improvement Program	BWWCAA08	Brisbane	QUU Forecast	3,615	3,290	4,198	0	0	11,103
			Proposed adjustment	-	-	-420	-	-	-420
			Halcrow Recommended	3,615	3,290	3,778	0	0	10,683
Brisbane Water Reclamation Plant Renewals Program	BWWTAA01	Brisbane	QUU Forecast	2,687	2,913	4,408	4,666	4,630	19,304
			Proposed adjustment	-	-	-360	-232	-232	-824
			Halcrow Recommended	2,687	2,913	4,048	4,434	4,398	18,480
Brisbane Gibson Island WRP - Sludge Dewatering Enhancement	BWWTAA28	Brisbane	QUU Forecast	116	1,729	2,970	0	0	4,815
			Proposed adjustment	-	-	-	-	-	0
			Halcrow Recommended	116	1,729	2,970	0	0	4,815
Brisbane Oxley Creek WRP - Primary Digesters Environment Upgrade	BWWTAA47	Brisbane	QUU Forecast	182	2,753	3,490	0	0	6,425
			Proposed adjustment	-	-	-	-	-	-
			Halcrow Recommended	182	2,753	3,490	0	0	6,425
Ipswich Deebing Creek Sewer Trunk Main Augmentation	IWWCAA30	Ipswich	QUU Forecast	546	4,245	1,000	0	0	5,791
			Proposed adjustment	-	-	-	-	-	-
			Halcrow Recommended	546	4,245	1,000	0	0	5,791
Ipswich Rosewood WRP Upgrade - Stage 2a	IWWTAA23	Ipswich	QUU Forecast	107	1,809	3,664	0	0	5,580
			Proposed adjustment	-	-	-474	1,671	-	1,197
			Halcrow Recommended	107	1,809	3,190	1,671	0	6,777
Total (Sampled Projects)			QUU Forecast	12,705	24,280	41,327	17,744	23,591	119,647
			Proposed adjustment	0	0	-2,869	1,233	-436	-2,072
			Halcrow Recommended	12,705	24,280	38,458	18,977	23,155	117,575
			Percentage adjustment	0.0%	0.0%	-6.9%	6.9%	-1.8%	-1.7%
Total Forecast (by sampled region/service)		Brisbane	QUU Forecast	12,052	18,226	36,663	17,744	23,591	108,276
			Proposed adjustment	0	0	-2,395	-438	-436	-3,269
			Halcrow Recommended	12,052	18,226	34,268	17,306	23,155	105,007
		Ipswich	QUU Forecast	653	6,054	4,664	0	0	11,371
			Proposed adjustment	0	0	-474	1,671	0	1,197
			Halcrow Recommended	653	6,054	4,190	1,671	0	12,568
Total Forecast (based on sampled projects only)			QUU Forecast	102,247	163,359	298,636	455,989	388,157	1,408,388
			Proposed adjustment	0	0	-2,869	1,233	-436	-2,072
			Halcrow Recommended	102,247	163,359	295,767	457,222	387,721	1,406,316

Table B.2
QUU - Capital Program Assessment
Extrapolated Assessment

Expenditure Category				2010/11	2011/12	2012/13	2013/14	2014/15	Total Forecast Cost 2010/11 to 2014/15
Renewals Program									
- Sampled Renewals Projects			QUU Forecast	8,139	10,454	26,005	17,744	23,591	85,933
			Proposed adjustment	0	0	-1,975	-438	-436	-2,849
			Percentage adjustment	0.0%	0.0%	-7.6%	-2.5%	-1.8%	-3.3%
- Total Renewals Program			QUU Forecast	83,741	104,587	142,628	142,672	146,034	619,663
			Renewals Program less sampled projects	75,602	94,133	116,623	124,928	122,443	533,730
			Proposed extrapolated adjustment (percentage)			-5.0%	-4.0%	-3.0%	
			Proposed extrapolated adjustment (amount)			-5,831	-4,997	-3,673	-14,502
Total Forecast Capital Expenditure			QUU Forecast	102,247	163,359	298,636	455,989	388,157	1,408,388
			Proposed adjustment (sampled projects)			-2,869	1,233	-436	-2,072
			Proposed extrapolated adjustment (amount)			-5,831	-4,997	-3,673	-14,502
			Proposed total adjustment	0	0	-8,700	-3,764	-4,109	-16,574
			Halcrow Recommended Capital Program	102,247	163,359	289,936	452,225	384,047	1,391,814



Appendix C. Progress of Previously Reviewed Capital Projects

An update of progress in respect of capital projects previously reviewed under the Interim Price Monitoring process is presented in this Appendix.

Table C.1 Update of Previously Reviewed Capital Projects

QCA		QCA		QCA		QUU		QUU		H		QUU						
Year reviewed	Project Reference	Project	Prudent	Efficient	QCA Revised Cost 2011-12	QUU Revised Forecasts 12/13	% above Submitted	Master plan/planning changes	Not Prudent or Not Rec. by QCA	Expenditure/ Project deferred	Scope definition issues	Scope change / variations	Cost	Restructured delivery / alternate project code	Timing	Supply chain problems	Contract Negotiation	QUU Response
2010-11	IWWTAA22	Ipswich Goodna STP Upgrade	Prudent	Efficient	129.7	106.1	-18.22%										+	Reduction in project cost due to favourable contract negotiations and gain share realised under the contract Guaranteed Maximum Price arrangements
2010-11	BWWCAA22	Brisbane Bulimba Creek Trunk Sewer Upgrade	Prudent	Efficient	51.9	50.7	-2%										+	Minor variance only associated with the time value of investment
2010-11	BDWDA01	Brisbane Burst Mains Renewal Program	Prudent	Efficient	27.2	7.0	3%							-				Response provided for 2010/11 FY only as this is a rolling program. Works proposed under this project 2010/11 are now incorporated under the BDWDA01 Brisbane Water Reticulation System Renewals Program Immaterial variance 3%
2010-11	LWWTAA21	Lockyer Valley Eastern Regional STP Upgrade	Prudent	Efficient	18.2	65.7	261%				-							In 2010/11, the initial project justification documents provided for the review were from the Lockyer Valley Regional Council (LVRC), and therefore what was reflected in the 2010/11 were the views of the LVRC, which were based on their regional strategies, options/analysis and cost estimates. Following the 2010/11 submission to the QCA, QUU engaged SKM in 2011 to further refine their study to determine the best long term strategy for providing sustainable sewage treatment facilities for these communities, with consideration of compliance obligations, population changes, emerging energy and carbon footprint drivers. The SKM study estimated a capital cost of \$63million. The difference in provided costs are because the initial cost only covered the upgrade of an STP. The entire scheme costs of network, pump stations and STP upgrades should have been provided.
2010-11	SWWTAA21	Somerset Fernvale STP Implementation	Prudent	Efficient	17.8	64.8	264%				-							In 2010/11, the initial project justification documents provided for the review were from the Somerset Regional Council (SRC), and therefore what was reflected in the 2010/11 were the views of the SRC, which were based on their regional strategies, options/analysis and cost estimates. Following the submission to the QCA in August 2010, QUU feasibility studies were conducted, followed by a Gateway Review Tier 1 (March 2011). In November 2011 the QUU Board resolved that the project proceed at an estimated forecast of \$62.4M based on feasibility and quantity surveyors independent estimates. The forecasted project costs of \$17.8m were amended due to change in the scope of the project. The project is to be completed in 2 steps. Step 1 involves increasing the capacity of Fernvale STP from 450 EP to approximately 1000 EP to meet environmental licence conditions. Currently Fernvale STP does not meet licence conditions, and overflow is experienced ie Growth in EP has led to non-compliance of licence conditions. Step 2 involves the following (i) Transfer of Lowood STP catchment sewage to Fernvale STP, (ii) Fernvale STP will be
2010-11	RWWTAA23	Scenic Rim – Bromelton STP	Not prudent	Not efficient	0.0	38.6	#DIV/0!		X	X								Further to the QCA Price Monitoring Final Report 2010/11 (project not prudent) proposed investment was deferred pending additional investigations \$16.7M 2010/11 was for treatment plant component only and did not include a second phase to the project
2010-11	IDWDA08	Ipswich Distribution Water Main Minor Enhance Program	Prudent	Efficient (minor adjustment)	6.5	0.2	82%					-		-				Response provided for 2010/11 FY only as this is a rolling program. Works proposed under this project 2010/11 are now incorporated under the IDWDA08 Ipswich Water Distribution Minor Enhance Program Minor difference of \$0.1M was mainly due to additional funding for emergent issues
2010-11	R_DW7	Scenic Rim Upgrade Walker Drive Reservoir Kooralybn	Removed	Removed	0.0	0.0	#DIV/0!	X										This project was removed due to changes to the Master Plan
2010-11	BWWCAA42	Brisbane Lang Parade Wet Weather Pump Station	Insufficient Information	Insufficient Information	0.0	0.0	#DIV/0!		X									Project was removed in line with findings from the QCA Price Monitoring Final Report 2010/11
2010-11	LDWDA08	Lockyer Valley Water Reticulation Mains Improvement Program	Prudent	Efficient	1.9	0.2	100%							-				Response provided for 2010/11 FY only as this is a rolling program. Works proposed under this project 2010/11 are now incorporated under the LDWDA08 Lockyer Valley Water Reticulation System Renewals Program
2010-11	SDWDA01	Somerset Water Reticulation Mains Renewal Program	Prudent	Efficient	1.3	#VALUE!												Response provided for 2010/11 FY only as this is a rolling program. Minor difference of -\$0.2M due extended time required to mobilise implementation of the minor works
2010-11	LDWDA01	Lockyer Valley Water Reticulation Mains Renewals Program	Prudent	Efficient	1.1	0.3	82%					-						Response provided for 2010/11 FY only as this is a rolling program. Minor difference of \$0.1M was mainly due to additional funding for emergent issues and cost variations
2010-11	IWWCAA03	Ipswich Sewerage Rising Mains Renewal Program	Prudent	Efficient	0.9	0.4	-33%			X			+					Response provided for 2010/11 FY only as this is a rolling program. Minor difference of -\$0.2M was mainly due to reduced funding from cost variations and deferrals
2010-11	SWWCAA01	Somerset Wastewater Reticulation Mains Renewal Program	Prudent	Efficient	0.8	0.2	-33%			X	X							Response provided for 2010/11 FY only as this is a rolling program. Minor difference of -\$0.1M due delays in defining project scope
2010-11	RDWDA35	Scenic Rim Brookes Drive Reservoir	Prudent	Efficient	0.2	0.3	62%				X							Minor variance of \$0.1M. At the time of submission for 2010/11 price monitoring a planning document was not available for this project. The revised estimate aligns with an Minor Capital Project Submission approved Sept 2010. Also project was delayed due to time required for land rezoning and prolonged procurement
2011-12	IWWTAA24	Ipswich Bundamba WRP Upgrade - Stage 5a	Prudent	Efficient	2.1	128.7	6175%			X								Project estimate and timeline has been revised in line with a draft implementation programme and budget provided by the Project Manager. Note construction on this project is not due to commence until 2014/15 with project commissioning scheduled for 2018/19
2011-12	BWWCAA02	Sewer Trunk System Renewals Program	Prudent	Efficient	14.2	8.6	-36%			X								Response provided for 2011/12 FY only as this is a rolling program. Delivery of works under this program was delayed for various reasons including - technical issues for the Upper Bulimba Creek Sewer project - changes in design methodology for the Cowper St Syphon project - wet weather and flow control issues impacted on delivery of the sewer reline package
2011-12	AICTAA01 AICTAA02	ICT Strategy	Prudent	Efficient	9.0	2.8	-69%											Response provided for 2011/12 FY only as this is a rolling program. Figures provided for all ICT Investment Programs in 2011/12 The difference is due an increased allocation of the ICT Investment Program to operational expense. The overall forecast investment of \$15M has not changed. However the original cost allocations assumed most of the investment would be towards purchase of a new ERP. However with the decision to 'lift and shift' the current ERP from the BCC platform to a QUU platform the amount of expenditure which could be capitalised reduced.
2011-12	BDWDA01	Brisbane Water Reticulation System Renewals Program	Prudent	Efficient	7.8	6.9	-8%											Response provided for 2011/12 FY only as this is a rolling program. Underspend is mainly due to reallocation of funds to the Scenic Rim Water Reticulation Renewals Program
2011-12	BWWTAA04	Brisbane Wastewater Treatment Flood Recovery	Prudent	Efficient	6.7	8.6	29%					-	-	-				Response provided for 2011/12 FY only as this is a rolling program. Additional funding required in particular for recovery of flood damaged assets at Oxley STP. This was due in part to unidentified damage at the time of the submission and an increase in some costs.
2011-12	AFLTAA01	Fleet Replacement Program	Prudent	Efficient – estimate adjusted to include overdue fleet replacements	7.9	5.0	-16%			X				?				Response provided for 2011/12 FY only as this is a rolling program. Delivery of fleet items were impacted by global events, in particular natural disasters in Asia. As a consequence some items scheduled for delivery in 2011/12 will now be delivered in 2012/13
2011-12	BWWCAA23	Auchenflower Branch Sewer Upgrade	Prudent	Efficient	5.5	8.4	52%			X								Minor cost variance only. Some scope deferred due to a delay in the awarding of the contract for relining work and also a requirement for the contractor to rectify some cracked pipes on the new pipeline.
2011-12	RWWTAA30	Canungra Water Reclamation Plant Upgrade	Prudent	Efficient	3.3	6.8	103%							?				Project savings were realised from risk mitigation activities and efficient delivery.
2011-12	BWWCAA26	Toowong Sewers Upgrade	Prudent	Efficient	5.0	5.2	4%											Minor cost variance only. Project delayed due to slow construction as a result of unexpected soil / rock conditions.
2011-12	IWWCAA32	Mellor Place Trunk Sewer Upgrade	Prudent	Efficient	0.7	1.1	57%											Response provided for Stage 1 only Project has been delayed due to allow time to resolve permit and access issues

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