Prudency and Efficiency Assessment - Unitywater

QUEENSLAND COMPETITION AUTHORITY

Price Monitoring of South East Queensland Water and Wastewater Distribution and Retail Activities 2013 - 2015

QE99110RP0002 | Final

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SINCLAIR KNIGHT MERZ SKM BDO

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Limitation statement

The sole purpose of this report and the associated services performed by Sinclair Knight Merz Pty Ltd (SKM) and its sub consultant (BDO) is to assist the Queensland Competition Authority (the Authority) in its price monitoring of the five SEQ water and wastewater distribution and retail entities in accordance with the scope of services set out in the contract between SKM and the Authority. That scope of services, as described in this report, was developed with the Authority.

In preparing this report, SKM has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Authority, the water distribution and retail entities and/or from other sources. Except as otherwise stated in the report, SKM has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

SKM derived the data in this report from information sourced from the Authority, the water distribution and retail entities and/ or available in the public domain at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the project and subsequent data analysis, and re-evaluation of the data, findings, observations and conclusions expressed in this report. SKM has prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

This report should be read in full and no excerpts are to be taken as representative of the findings. No responsibility is accepted by SKM for use of any part of this report in any other context.

This report has been prepared within the time restraints imposed by the project program. These time restraints have imposed constraints on SKM’s ability to obtain and review information from the entities.

This report has been prepared on behalf of, and for the exclusive use of, the Authority, and is subject to, and issued in accordance with, the provisions of the agreement between SKM and the Authority. SKM accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this report by any third party.

1. Introduction

The Queensland Competition Authority (the Authority) is continuing the process of monitoring the prices for water and wastewater services provided by the five water distribution and retail entities within SEQ:

- Queensland Urban Utilities
- Unitywater
- Gold Coast City Council
- Logan City Council
- Redland City Council

The five entities, own, operate and maintain the local water and sewerage distribution infrastructure and are responsible for the retail sale of water supply and sewerage services to customers. The purpose of the monitoring is to review the costs and revenues associated with the provision of water and wastewater services by the five entities. The five entities are monopoly providers in neighbouring areas. The aim of the price monitoring assessment is to ensure efficiency of costs within the monopoly distribution and retail businesses and to ensure sustainable water practices within the SEQ water industry.

To assist this process, the Authority appointed SKM to review the capital and operating expenditure forecasts for provision of regulated services over the period from July 2013 – June 2015.

The consultancy consists of two components:

- Component 1 – Sample Selection
- Component 2 – Prudency and Efficiency of Costs

Under the terms of appointment, SKM is required to:

a) Assess the existence of robust policies and procedures having regard to good industry practice, as well as compliance, using the review of processes and procedures implemented in approvals of expenditure and costs for a sample of capital expenditure projects and operating expenditure categories to evaluate such. In this assessment, SKM is to determine if particular, policies and procedures reflect strategic development plans, integrate risk and asset management planning, if they support corporate directives, if they are consistent with external drivers, and if they incorporate robust procurement practices

b) Assess the robustness of the operating and capital expenditure program planning and delivery processes in an overall sense and identify any areas for improvement

c) Form a view on the prudency and efficiency of capital and operating expenditure, focusing on any areas of significant cost increase and identifying the reasons why such cost increases have occurred

In addition, the Authority has engaged SKM to review the entities' progress in implementing the Authority's supported criteria; which are:

- Consideration of prudency and efficiency of capital expenditure from a regional (whole-of-entity and whole-of-sector) perspective
- Consideration of alternative investments, the substitution possibilities between operating costs and capital expenditure, and non-network alternatives such as demand management.
- A standardised approach to cost estimating, including a standardised approach to estimates for items such as contingency, preliminary and general items, design fees and contractor margins, so that there is uniformity of cost estimating across all proposed major projects
- A summary document to be prepared for identified major projects so as to facilitate standardised reporting
- An implementation strategy to be developed for each major project

- A 'toll gate' or 'gateway' review process to be implemented so that appropriate reviews are undertaken at milestone stages for selected projects
- Information on the compatibility with existing and adjacent infrastructure and consideration of modern engineering equivalents and technologies.
- Includes only commissioned capital expenditure from 1 July 2010 in the regulatory asset base (RAB) and therefore

SKM has prepared a report for each of the five water distribution and retail entities (Queensland Urban Utilities, Unitywater, Gold Coast City Council, Logan City Council and Redland City Council). This report documents SKM's review of the prudency and efficiency of the operating costs and capital expenditure for Unitywater for the July 2013 to June 2015 period. The assessment of project demand for this period will be addressed in a separate report when awarded by the Authority.

1.1 Prudency and efficiency

SKM has adopted the following definitions of prudency and efficiency of operating costs and capital expenditure generally as set out by the Authority in its terms of reference:

- ***Operating expenditure*** is ***prudent*** if it is required to meet the entities' requirements relating to its legal and regulatory obligations or its contracts with customers
- ***Operating expenditure*** is ***efficient*** if it is undertaken in a least-cost manner over the life of the relevant assets and is consistent with relevant benchmarks
- ***Capital expenditure*** is ***prudent*** 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
- Capital expenditure is efficient 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, the substitution possibilities between capital and operational expenditure and non-network alternatives such as demand management;
  - The standard of the works conforms to 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 regulatory obligations (e.g. water netserv plans[1]) is likely to be highly relevant
  - 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

1.2 Scope exclusions

The following items are outside of the scope of our review:

- Review of capital costs before 2012-13 and after 2014-15 associated with projects that have been reviewed, unless expenditure is to be commissioned in the review period
- Review of other parts of a project for which a specific part is being undertaken as part of the commission, eg the review of a supply contract when we are reviewing the installation contracts of supplied goods
- Development of detailed budget cost estimates for the capital projects under review

[1] Refer to the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009* (Qld).

1.3 Report overview

This report is structured as follows:

- Section 1 provides an introduction to the project
- **Section 2** provides background in respect of Unitywater, the Authority and the scope of this review
- **Section 3** outlines SKM's review of Unitywater's management processes, and more specifically, its approach to planning and asset management
- **Section 4** outlines SKM's assessment of the operating costs incurred/forecast by Unitywater
- **Section 5** outlines SKM's assessment of capital expenditure incurred/forecast by Unitywater
- **Section 6** summarises the findings of SKM's assessment and presents the conclusions drawn from the review and recommendations in respect of the prudency and efficiency

1.4 Application of assessment

SKM's assessment of prudency and efficiency of capital expenditure applies to Unitywater's proposed expenditure from 1 July 2013 to 30 June 2015 and to an assessment of prudency and efficiency of proposed operational costs forecasts from 1 July 2013. The underlying information used to make this determination may only be relevant to the particular circumstances and activities that will be undertaken in 2013-15. Hence, the acceptance of expenditure as being prudent and efficient in this assessment should not be used a precedent for regulatory assessments in the future. This applies to both recurring operating expenditure and capital projects where capital expenditure will be spread over a number of years.

2. Background

2.1 The entities

On 1 July 2010, the Queensland Government implemented a series of reforms in the SEQ water industry. One result of this was the formation of three new water distribution and retail entities. These entities were formed by amalgamating a number of council based and owned water utilities into three larger water entities. These entities owned the water and sewerage distribution infrastructure and sell water and sewage disposal services to customers in their respective areas. The three distribution and retail entities were Queensland Urban Utilities, Unitywater and Allconnex Water.

In addition to the retail distribution entities, four new bulk water entities that own and operate the SEQ Water Grid were established.

On 1 July 2012, Allconnex Water was disestablished which enabled Gold Coast City Council, Logan City Council and Redland City Council to resume the delivery of water and wastewater services in their local government areas. As a result of these changes, five entities now own, operate and maintain the local water and sewerage distribution infrastructure in South-East Queensland and are responsible for the retail sale of water supply and sewerage services to customers. The progression of the responsible entity for the servicing areas is illustrated in Table 1.

Table 1 : Water Distribution and Retail entities servicing areas

Water Distribution and Retail Entities (Prior to 30 June 2010)	**Water Distribution and Retail Entities (1 July 2010 - 30 June 2012)**	**Water Distribution and Retail Entities (1 July 2012 - Present)**
Brisbane City Council	Queensland Urban Utilities	Queensland Urban Utilities
Ipswich City Council		
Lockyer Valley Regional Council		
Scenic Rim Regional Council		
Somerset Regional Council		
Sunshine Coast Regional Council	Unitywater	Unitywater
Morton Bay Regional Council		
Gold Coast City Council	Allconnex Water	Gold Coast City Council
Logan City Council		Logan City Council
Redland City Council		Redland City Council

Figure 2-1 : SEQ Water Grid as at 1 July 2012 Invalid source specified.

It is noted that a merger of the SEQ Water Grid Manager, LinkWater and the former Seqwater occurred on 1 January 2013 with the formation of the new the Seqwater. The organisation has also taken on the water security and efficiency responsibilities previously performed by the Queensland Water Commission.

The five current entities are the subject of this interim price monitoring assessment. This report is built on the three previous years of annual interim price monitoring from 1 July 2010 to 30 June 2013, and is being carried out against a backdrop of:

- Entities in the fourth year of an establishment phase (Queensland Urban Utilities and Unitywater)
- Entities in the second year following the disestablishment of Allconnex Water
- Historic data drawn from information provided by previous service providers
- Entities implementing developed processes and systems for:
  - Capital works evaluation, approval and budgeting
  - Operational expenditure budgeting

2.2 Unitywater

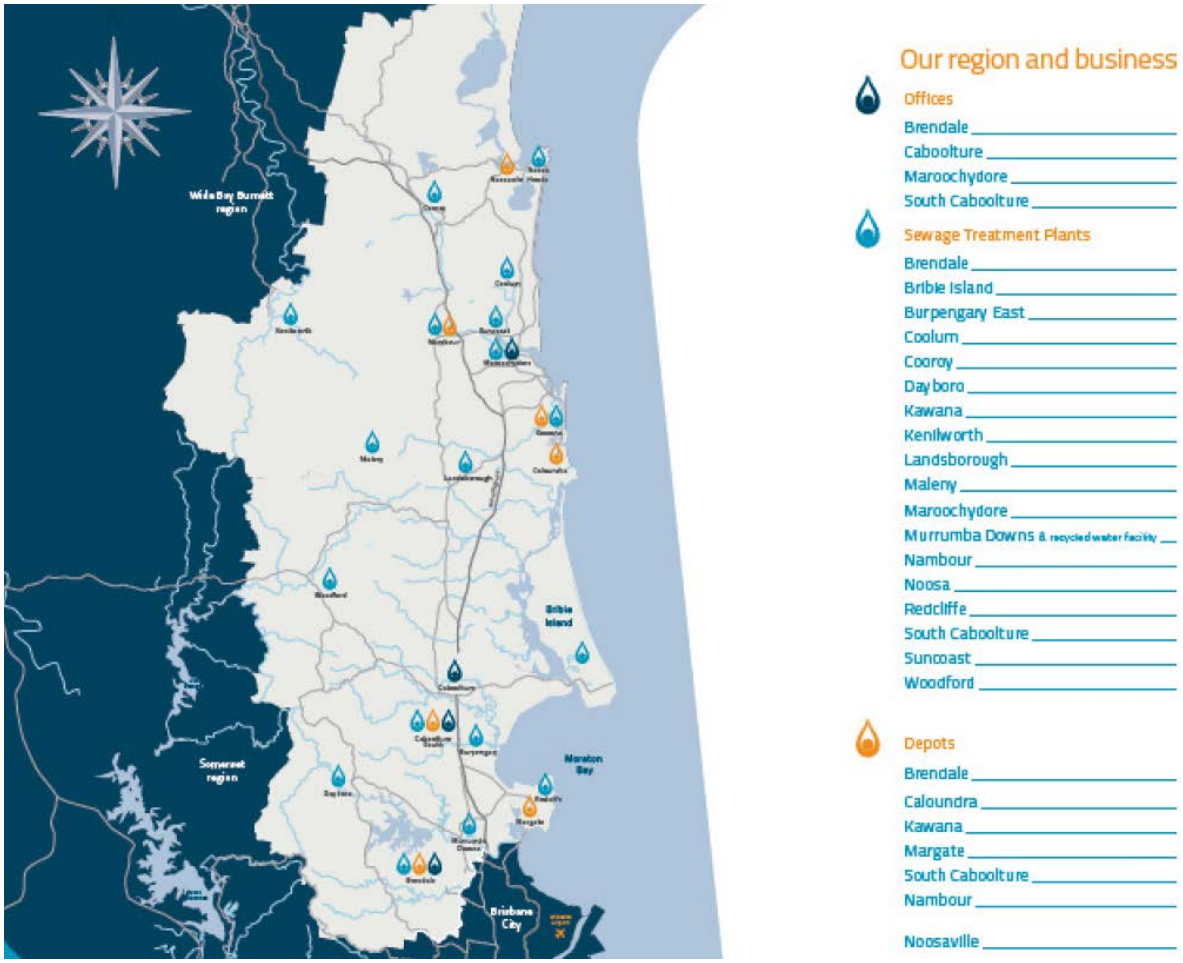
The Northern SEQ Distributor - Retailer Authority trades as 'Unitywater'. Unitywater provides water supply and sewerage services to an estimated population of 722,000 customers within an area covering some 5,223 km^2, Figure 2-2. Unitywater's service area stretches from Ferny Hills in the south to Noosa in the north. (Unitywater, 28 June 2013)

Water services more than 267,000 residential and 15,000 non-residential connections, whilst sewerage services are provided to approximately 256,800 residential and 13,000 non-residential connections (Unitywater, 28 June 2013).

Unitywater's infrastructure assets include:

- 108 water reservoirs
- 79 water supply pumping stations
- 5,542 km of water supply pipelines
- 18 sewage treatment plants
- 777 sewage pumping stations
- 5,352 km of sewerage pipeline
- 2 advanced water treatment plants (Unitywater, 28 June 2013)

Figure 2-2 : Unitywater's service area (Unitywater, 2011)



Unitywater is a statutory authority that services the Moreton Bay and Sunshine Coast local authority areas on behalf of its citizens. Unitywater is governed by an independent board. The three parties (Participants), ie. Unitywater, Sunshine Coast Regional Council and Moreton Bay Regional Council, have entered into a Participant Agreement (Participation Agreement, 25 June 2010) that outlines their relationship and respective obligations; a Statement of Obligations is incorporated (as Schedule 1) into the Agreement.

Under the provisions of the Participation Agreement, Unitywater is to be governed by an independent Board consisting of five Members, who are responsible for ensuring the proper and efficient management of the organisation. Board Members are appointed by agreement of the parties, and must include no more than three

(3) councillor members and at least three (3) independent (non-councillor) members. Councils do not have control or direction over day to day operations.

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.

2.3 The role of the Authority

The Authority is an independent Statutory Authority established by the Queensland Competition Authority Act 1997 and is given the task of regulating prices, access and other matters relating to regulated industries in Queensland.

Under the Queensland Competition Authority Act, the Authority's roles in relation to the water industry are to:

- Investigate and report on the pricing practices of certain declared monopoly or near monopoly business activities of State and local governments
- Receive, investigate and report on competitive neutrality complaints
- Mediate and/or arbitrate access disputes and water supply disputes
- Investigate and report on matters relevant to the implementation of competition policy

The Treasurer and Minister for State Development and the Minister for Finance and Minister for The Arts have referred the monopoly distribution and retail water and wastewater activities of Queensland Urban Utilities, Unitywater, Gold Coast City Council, Logan City Council and Redland City Council to the Authority for price monitoring from 1 July 2013 to 30 June 2015.

Under the referral, the Authority must:

- Provide information to customers about the costs and other factors underlying the provision of water and sewerage services including distinguishing between bulk and distribution/retail costs to the extent possible
- Allow the entities to treat bulk water costs as a 'cost-pass-through' item
- Monitor the change in prices of distribution and retail water and sewerage services for residential and non-residential customers
- Monitor water and sewerage revenues against the maximum allowable revenue based on the total prudent and efficient costs of carrying on the activity
- Advise a benchmark Weighted Average Cost of Capital (WACC) by 31 January 2013 and monitor the WACCs applied by the entities against the benchmark WACC
- Provide a Draft Report for 2013-15 by 31 January 2014 and a Final Report by 31 March 2014

3. Policies and procedures

3.1 Introduction

For Unitywater this report addresses the following task:

> *"Assess the existence of robust policies and procedures having regard to good industry practice, as well as compliance"* [2]

It includes the following specific assessment for capital expenditure, and a similar review for operating expenditure.

a) *"assess whether the entities' policies and procedures for capital expenditure are robust having regard to good industry practice, as well as compliance… In particular, the policies and procedures should reflect strategic development plans, integrate risk and asset management planning, corporate directives, regional priorities, be consistent with external drivers, and incorporate robust procurement practices*

b) *the review of policies and procedures should also report on whether the entity:*

   i. *considers the prudency and efficiency of expenditure from a regional perspective;*

   ii. *includes only commissioned capital expenditure from 1 July 2010 in the regulatory asset base (RAB) and therefore prices;*

   iii. *applies a standardised approach to cost estimating, including for items such as indexation, contingency, preliminary and general items, design fees and contractor margins;*

   iv. *prepares a summary document and implementation strategy for major projects and programs; and*

   v. *includes a 'toll gate' or 'gateway' review process at relevant milestone stages;*

c) *assess the robustness of each entity's capital expenditure program and delivery processes in an overall sense and identify any areas for improvement;"* [3]

3.2 Capital expenditure policies and procedures

3.2.1 Good industry practice

SKM considers that good industry practice for the development of capital projects and budgets includes the following:

- The identification of projects which meet the requirements of prudency and efficiency
- Project prioritisation, including prioritisation across programs of work
- Consideration of the timing of projects and the ability to deliver the capital program
- A defined review and approvals process, including documentation of this process

This has been codified in the Gateway™ Process developed by the UK Office of Government Commerce, which has been endorsed by the Queensland Government and a number of other states for major infrastructure programs and projects.

[2] Referral Notice (g) i
[3] Terms of Reference 2013-15 SEQ Price Monitoring Assessment of Operating and Capital Costs issued to SKM by the Authority

In respect of supporting documentation required to gain approval for capital expenditure for a given capital project, good industry practice should include:

- A phased process, starting with a project outline, through a series of approval gates to defined requirements for business cases and final approvals
- A tiered structure, with differentiated requirements and degrees of documentation and review for projects depending on their cost
- Alignment with strategic business drivers such as strategic plans, customer service standards and compliance requirements
- Fully supported capital expenditure approval documentation incorporating:
    - The project background/rationale
    - The project drivers
    - The options reviewed to address the drivers, including the method of selecting the preferred option
    - For major projects, a fully costed and financially evaluated option studies, including a “do nothing” option, preferably on a present value, or, if appropriate, a net present value basis
    - Where capital is constrained, explanation of why a project is proposed over others that may adhere to the above requirements
    - A defined scope of works for the preferred option
    - The identification of project risks and how they will be managed
    - A breakdown of the approved project cost and the basis of this cost estimate, including defined cost estimating procedures, including the treatment of contingencies
    - The critical success factors of the project
    - An implementation plan

For historic projects, the process should address:

- How the project was implemented
- How the project performed – successes and lessons learned
- How the project addressed the original need
- How the project addressed the critical success factors
- How the as-built cost compared with the original estimate
- If the as-built cost of the project changed the order of merit of the options considered at the options analysis stage

The level of supporting documentation will be dictated by the project size, project cost and the respective sign-off authority level within an organisation. The SKM chart below is an indicative illustration of the kind of detail which may be presented at different stages of a project’s development, and notes that the estimates used for many projects can be expected to have an uncertainty of 30% or more.

Figure 3-1 : Typical estimation accuracies and expected documentation

Capital Project Estimating Classifications

	Class 4 Order of Magnitude	Class 3 Pre-Feasibility Study (PFS)	Class 2 Feasibility Study (FS)	Class 1 Definitive Estimate
Methodology	Capacity Factored Equpment Factored (2) Historical data/Parametric models	Conclusion of MTCs, budget pricing, factors and semi-detailed unit rates	Detailed MTOs, detailed until costs, budget pricing for all major equipment. Detailed equipment list.	Contribution of comments, awarded contracts, defined unit rates and detailed MTO's.
Purpose	Preliminary economic and technical investiaion. Project screening. Comparision or alterntives, configurations and options.	Economic feasibilty of one or more chosen options.	Project approval and basis of securoing finacing "sustainable" study.	Detailed control, target measuement, change variation, monitor and control of implementation phase.
Basis of Estimate				
Accuracy-Indicative Range	±30% to ±100%	±20% to ±25%	±10% to ±15%	±5% to ±10%
Accuracy Develelopment	Judgemental	Evaluated	@Risk Detail Analysis	@ Risk Detail Analysis
Level of Project Definition	0% to 5%	10% to 30%	30% to 70%	70% to 100%
Level of Engineering (% of Total)	0 to 2%	2% to 5%	10% to 15%	5% to 10%
Expected Estimate Contingency Range	25% to 40%	15% to 20%	10% to 15%	5% to 10%
Contracting Strategy	Assumed	Preliminary	Defined	In place
Site				
Location	Assumed	Preliminary	Specific	Final
Maps and Surveys	None	Preliminary	Some detail	Detail
Soil Tests and Geotechnics	None	Preliminary	Final	Final
Site Visits	Not essential	Desirable	Essential	Consturction start
Construciton Support	Assumed	Proposed method	Detail support	Final
Construciton site Agreement	Assumed	Assumed	Prelim discussion	Final/In place
Delivery Strategy	Assumed	Preliminary	Initial strategy	Specific
General Project Data				
Project Scope Description	General	Preliminary	Defined	Defined
Plant production/Facility Capacity	Assumed	Preliminary	Defined	Defined
Hydrology	None	Preliminary	Defined	Defined
Integrated project Plan	None	Preliminary	Defined	Defined
Project Master Schedule	None	Preliminary	Defined	Defined
Escalation Strategy	None	Preliminary	Defined	Defined
Work Breakdown Structure (WBS)	General	Preliminary	Defined	Defined
Project Code of Accounts	None	Preliminary	Defined complete	Defined
Contingency Strategy	Assumed/Factored	Calculated	Detail calc./Analysis	Detail calc. on ETC
Engineering Deliverables				
Block flow Diagrams	Started Preliminary	Preliminary/ Complete	Complete	Complete
Plot Plans	None	Started	Preliminary/ Complete	Complete
Process Flow Diagrams (PFDs)	None	Startd/Preliminary	Preliminary/ Complete	Complete
Utility Flow Diagrams (LFDs)	None	Startd/Preliminary	Preliminary/ Complete	Complete
Piping & Instrumentation Diagrams (P&IDs)	None	Started	Preliminary/ Complete	Complete
Heat & Material Balances	None	Started	Preliminary/ Complete	Complete
Process Equipment List	None	Started/Preliminary	Preliminary/ Complete	Complete
Utility Equipment List	None	Started/Preliminary	Preliminary/ Complete	Complete
Electrical Single Line Diagrams	None	Started/Preliminary	Preliminary/ Complete	Complete
Specifciations & Data Sheets	None	Started	Preliminary/ Complete	Complete
General Arrangement Drawings	None	Started	Preliminary/ Complete	Complete
Spare Parts Inventory	None	% of Direct Cost	Started/Preliminary	Preliminary/ Complete
Detailed Design Drawings	None	None	Started	Preliminary/ Complete
Capital Cost Estimate				
Infrastructure Costs:	Assumed	Investigated	Finalise detail	Finalised
General Cost Approach	Factored block costs	Preliminary quanity	Detail quanity	Detail/acutal quanity
Major Equipment Costs	Data bank/factored	Single source	Multiple source	Fixed tender
Civil Work	Rough quantity	Preliminary	Detailed take-off	Tender prices
Structural Work	$/unit vol.	Prelim take-off	Detailed take-off	Tender prices
Piping and Instrumentation	% machinery	Prelim take-off/%	Detailed take-off	Tender prices
Electrical	$kW	Prelim take-off	Detailed take-off	Detailed estimates
Installation	Factored/%	Man-hours/unit rates	Man hours	Man-hours/ contract
Indirect Costs	% or total	Prelim calculation	Calculation	Detail calcuation

This approach is similar to the widely used front-end-loading (FEL) approach to capital project development and similar processes used within major resources companies.

In addition, the overall capital expenditure programme should be weighted equally through the respective regulatory periods. This strategy maintains a steady and reliable stream of work for construction contractors and reduces the price impacts of the substantial capital works programmes during earlier years of the regulatory period.

As the multi-year capital expenditure programme is updated each year through this planning process, its impact on operating costs should be incorporated into the following year's budget for review by senior management and approval by the Board.

3.2.2 Unitywater process

In its assessment of Unitywater's capital expenditure Policies and Procedures SKM reviewed the following documents supplied:

- "Capital Works Planning Manual" Revision 6, dated 5 May 2013
- "Contingency Plans for new Capital Projects" dated 29 May 2013
- "Project Prioritisation and Triple Bottom Line Reporting Criteria" dated 26 June 2012
- "Capital Works Manual Review" dated 15 May 2013
- "Business Case" dated 5 February 2013
- "Netserv Plan Part B Guide to the Netserv Plan" Revision 2 dated June 2012
- "Netserv Plan Part B Customer Service Plan" Revision 2 dated May 2012
- "Netserv Plan Part B Corporate Services Plan" undated and with no version
- "Netserv Plan Part B Corporate Services Plan – Governance Arrangements" Revision 2 dated July 2012
- "Netserv Plan Part B Corporate Services Plan – Organisational Design Strategy" Version 2 dated June 2012
- "Netserv Plan Part B Corporate Services Plan – Human Resource Strategy" Version 2 dated June 2012
- "Netserv Plan Part B Corporate Services Plan – Occupational Health and Safety Plan" Revision 2 dated June 2012
- "Netserv Plan Part B Corporate Services Plan – Risk Management Strategy" Revision 2 dated June 2012
- "Netserv Plan Part B Corporate Services Plan – Environmental Management Plan" Revision 1 dated June 2012
- "Netserv Plan Part B Corporate Services Plan - Financial Strategy" Version 2 dated June 2012
- "Netserv Plan Part B Corporate Services Plan – Financial strategy for sustainable water supply and sewerage services " Version 2 dated June 2012
- "Netserv Plan Part B Corporate Services Plan – Integrated Water Management Strategy - The Total Water Cycle " Version 2 dated June 2012
- "Netserv Plan Part B Corporate Services Plan – Integrated Water Management Strategy - Growth Management Plan" Revision 1 dated May 2012
- "Netserv Plan Part B Corporate Services Plan – Asset Management Plan for Network and Treatment Assets" Version 2 dated June 2012
- "Netserv Plan Part B Corporate Services Plan – Property Strategy" Version 2 dated June 2012
- "Netserv Plan Part B Corporate Services Plan – External Stakeholder Management Strategy " Version 2 dated June 2012

- "Netserv Plan Part B Corporate Services Plan – Fleet Strategy" Version 2 dated June 2012
- "Netserv Plan Part B Corporate Services Plan – Knowledge Management Strategy " Revision 2 dated June 2012
- "Netserv Plan Part B Corporate Services Plan – Overview of Information & Communication Technology " Version 4 dated 10 September 2012

Table 4 of the "Netserv Plan Part B Guide to the Netserv Plan" contains expected dates of the next major revisions for Netserv Plan documents, ranging from August to December 2012. These dates have passed and the documents reviewed are dated prior to these dates, indicating the revisions have not occurred as expected.

3.2.3 Capital expenditure program and delivery processes

Unitywater's capital expenditure program and delivery processes are outlined in its Capital Works Planning Manual. The Capital Works Justification Manual documents the process and decision points. The process covers the identification, development, prioritisation and approval phases of a typical capital works project/program.

From Asset Management Plans, Network Master Plans, the Treatment Services Strategy and Capital Project Requests, Unitywater develops a list of approved Project Description Statements and Business Cases. Unitywater states that a prioritisation model is used to assess projects across the region. This risk based model allows each project to be assessed, scored and ranked. Projects are evaluated and scored against weighted criteria which align with Unitywater's corporate risk assessment methodology. These documents are used to form the five year list of capital expenditure works.

Capital expenditure is approved by the Unitywater Board as part of its overall budget approval process. This process includes ongoing review of expenditure by a committee of the Board, the Capital Works Committee, established to monitor and review the capital expenditure program and its delivery, and ensure the program is consistent with Unitywater's strategic objectives.

Unitywater states that the Capital Works Committee assists the Board to discharge its corporate governance responsibilities to exercise due care, diligence and skill in the approval of strategic capital works, annual capital works expenditure and significant capital works commitments. It also assists with compliance with regulatory principles and applicable licence conditions as applied by the relevant environmental regulator. The committee also makes decisions as required on variations or budget changes and approves expenditure above the CEO's delegation.

Unitywater has also established an Asset Steering Committee to review and endorse investment decisions for capital and operations projects. This committee reports to the Executive Management Team.

As stated in Unitywater's Netserv Plan Part B, the following processes have been introduced to ensure that investment and operating decisions are prudent and efficient:

- Assessment tools and procedures such as the capital works justification process detailed in the Capital Works Justification Manual
- A process to assess network investment and operating decisions through the Asset Steering Committee, chaired by the Chief Operating Officer
- A process to report investment decisions to the Capital Works sub-committee of the Board
- Creation of a Business Improvement Office chaired by the CFO to assess the relative merits and approval of business improvement opportunities on a case by case basis.

The Capital Works Committee meets monthly to review planning and delivery of the program. The Asset Steering Committee is a multi-divisional one to better assess the justification for capital works proposals having regard for their operating costs and risks, as well as for Unitywater's strategic objectives, including reducing the cost to serve. The Business Improvement office has a similar function for non-network projects.

3.2.4 Standardised approach to cost estimating

A Capital Works Estimating Tool is included in Appendix 8 of the Capital Works Planning Manual. Its methodology is described in Appendix 6 and its guidelines for use are described in Appendix 7. It is in accordance with good industry practice. However it was not clearly stated how mandatory is its use and so it is not robust.

SKM has not seen evidence of this tool being used in any of the capital expenditure projects reviewed. However, as this tool has been devolved to assist Unitywater to price core business elements (pumps, pipework, fittings etc), SKM is satisfied that its use may not be appropriate for non-core business areas (such as buildings and vehicles).

3.2.5 Prepares a summary document

For projects below $5 million, the summary document used by Unitywater is the Project Description Statement (PDS) outlined in Appendix 4 of the Capital Works Planning Manual. It is in accordance with good industry practice and is robust.

For major projects, above this level, a Major Project Submission is required for this purpose. The “Business Case” template is used. It is in accordance with good industry practice and is robust.

3.2.6 Prepares an implementation strategy

The “Business Case” template requires assessment of the project’s management, staging, internal impacts, project execution risks and procurement strategy. It is in accordance with good industry practice and is robust.

3.2.7 Includes a ‘gateway’ review process

The Capital Works Planning Manual describes a series of decision gates. These include the Need Definition and the Business Case, as well as successive approvals up to board level.

The Major Projects Gateway Process (Major Projects Gateway Process.xls, undated) describes that process at Gate 1 (Needs Analysis), Gate 2 (Business Case), Gate 3 (Design and Tendering) Gate 4 (Construction, Commissioning and Handover) and Gate 5 (Close Out). However, Gate 5 only applies to all Major Projects completed within Treatment Plants.

Therefore, SKM considers that the Unitywater process does not yet fully meet the requirement of a gated review process that is in keeping with good industry practice.

3.2.8 Includes a detailed analysis of options for major projects

Section 4.9 of the Capital Works Planning Manual summarises the Investment Appraisal of Options. This describes a “*financial evaluation*” based on comparing the “*net present value of future incremental cash flows*”, including income and tax effects. Sensitivities are also analysed.

The summary describes only a financial comparison of options and does not include a risk (eg environmental, implementation) comparison of the options.

However the “Business Case” template requires assessment of a range of project options across relevant areas such as quality, risk, operations, environmental, regulatory and compliance, as well as the financial evaluation. It is in accordance with good industry practice and is robust.

3.2.9 Only includes only commissioned capital expenditure from 1 July 2010 in the RAB

In the 'Price Monitoring Submission – 2013-15', Unitywater states:

a) *"Capital projects are added to the RAB on an as commissioned basis. Capital projects are capitalised and added to the RAB at the mid-point of the commissioning year. Any expenditure that occurs after the commissioning date is capitalised in the year of spend; and*

b) *Renewal projects are capitalised each year regardless of commissioning date."*

In the 'Price Monitoring Submission – 2013-15' Unitywater further states:

> *"Consistent with statutory accounting requirements, Unitywater has applied interest on projects that extend beyond 12 months. This is calculated as the difference between the commencement date and the commissioning date. Renewals are capitalised on a yearly basis so do not incur any interest during construction."*

and

> *"RAB indexation uses the annual June to June ABS Consumer Price Index (al groups, Brisbane) for historical years; the March to March observation for the most recent financial year 2012-13 and the RBA CPI estimate of 2.50% in all forecast years."*

The 'Price Monitoring Submission – 2013-15' includes the following table which provides an estimate of the RAB as at 30 June 2015.

Table 2 : Estimated RAB roll-forward for this period ($M)

Description ($M)	MBRC	SCRC	Combined Total
Initial RAB 1 July 2010	1,342.5	1,074.2	2,416.7
Add Commissioned Assets	500.9	396.4	897.3
Add Indexation	190.5	144.8	335.3
Less Regulated Depreciation	273.1	198.6	471.7
Closing RAB 30 June 2015	**1,760.8**	**1,416.8**	**3,1776.0**

The information provided in the *QCA Templates - UW 2013-15 Regulatory Submission.xls* (Unitywater, 2013), 5.6.2 Supplementary tab, covers the period 2013-14 to 2017-18. It is not possible for SKM to reconcile expenditure prior to this period or make a clear determination as to whether the RAB only includes commissioned capital expenditure from 1 July 2010.

Table 3 : 2013-15 expenditure ($M) (Unitywater, 2013)

Period	Budgeted Expenditure	Budgeted OCAM	Budgeted Interest Cap.	Total
2013-14	143.4	21.8	4.2	169.4
2014-15	51.2	8.7	1.1	61.0
Total	**194.5**	**30.5**	**5.3**	**230.3**

Unitywater state that "*for the 2013-15 price monitoring submission Unitywater reconstructed its entire RAB in order to replace and transition the excel spreadsheet based RAB and ultimately to have the asset management system that contains the statutory and tax asset values to also include regulatory values for each asset.*

Unitywater consulted and agreed with the QCA, that the June 2013 submission would be based on interim templates and preliminary RAB work papers. These will be updated prior to QCA's draft report".

SKM notes that Unitywater has had three successive years of price monitoring and each report had found that Unitywater had only rolled into the RAB projects properly capitalised in those years. In addition, SKM notes that Unitywater is currently in a transition period, where it is seeking to simplify and transition maintenance of a RAB from a stand-alone excel based platform. Unitywater states that it "*intends to completely move off excel for RAB and put the information into our asset management system CAMS*".

Overhead cost allocation methodology (OCAM)

Unitywater's 'Overhead Capitalisation Policy' provides guidance to Unitywater management and staff in relation to cost allocation principles, policy and ongoing obligations as they relate to the operations and delivery of the Capital Works programme. The purpose of the policy is to establish the guidelines, intent and responsibilities supporting the allocation of indirect overhead costs of service divisions to Capital Projects. This is necessary to account for the real cost and valuation of the completed assets. The policy applies to the allocation of support services costs to capital works in progress (CWIP) on a monthly basis, commonly referred to as the OCAM process. The policy is designed to provide guidance to the accounting staff of Unitywater in order to consistently apply the allocation methodology and regularly update the applicable 'Capital Overhead Rate'.

The OCAM process uses a Capital Overhead Rate based upon the following formulas:

a) Actual direct capital expenditure/(actual total operational costs of Infrastructure Services Division, Infrastructure Planning and Capital Delivery, & Retail + actual direct capital expenditure) = A

b) Ratio A * (support services forecast operational overheads)/direct capital expenditure.

The Capital Overhead Rate calculated at B is applied to the actual direct CWIP costs incurred for the period i.e. monthly. The value is then added to the CWIP against two natural recovery accounts in the income statement of the division i.e. one for labour and one for materials.

Capitalised interest

The capitalisation of interest can be summed up to the following:

- Interest on eligible assets is capitalised to be compliant with Accounting Standard AASB123 – Borrowing costs
- An eligible asset is one that takes more than 12 months to construct and is funded either partially or fully by debt
- Capitalisation of interest starts when costs are incurred for projects, and ceases when the project is completed (commissioned)

Interest is capitalised using the QTC CSP borrowing rate.

3.2.10 Compliance

As well as generic legislation, Unitywater needs to comply with the following industry-specific regulatory requirements in its capital expenditure processes:

- Water Act 2000
- Water Supply (Safety and Reliability) Act 2008
- Sustainable Planning Act 2009
- Environmental Protection Act 1994
- Environmental Protection (Water) Policy 2009
- Plumbing and Drainage Act 2002
- Public Health Regulation 2005

- Australian Drinking Water Quality Guidelines
- South East Queensland Water (Distribution and Retail Restructuring) Act 2009
- Water and Sewerage Services Code for Small Customers in South East Queensland 2013
- Financial Accountability Act 2009
- Financial and Performance Management Standard 2009
- Queensland Procurement Policy

The Financial Accountability Act 2009 and the associated Financial and Performance Management Standard 2009 set out the financial management and reporting responsibilities of statutory bodies in Queensland, including Unitywater. As well, it mandates compliance with the Queensland Procurement Policy. The Auditor-General is responsible for giving an opinion on whether these requirements have been complied with in all material respects.

SKM has reviewed Unitywater's major capital expenditure governing documents supplied with the results shown below.

Major governing documents supplied/accessed	Issues arising from Unitywater's documents
Unitywater Code of Conduct Policy[4]	The South East Queensland Water (Distribution and Retail Restructuring) Act 2009, and 10 generic Acts are specifically referenced.
"Unitywater Corporate Strategic Plan 2013-14 to 2017-18"	The South East Queensland Water (Distribution and Retail Restructuring) Act 2009 is specifically referenced.
"Unitywater Netserv Plan Part A". The document was a consultation draft and did not have an applicable date or version.	Environmental and licence compliance is addressed on page 35. Meeting legislative obligations generally is addressed on pages 44 and 46. The Sustainable Planning Act 2009 is specifically referenced on page 97.
"Netserv Plan Part B Corporate Services Plan Governance Arrangements" Revision 2, June 2012	The following industry-specific Acts are specifically referenced: • Sustainable Planning Act 2009 • SEQ Water (Distribution and Retail Restructuring) Act 2009 • Water Act 2000 • Fairer Water Prices for SEQ Amendment Act 2011 • Queensland Competition Act 1997 • Environmental Protection Act 1994 • Water Supply (Safety and Reliability) Act 2008 • Market Rules - QWC
"Netserv plan framework diagram" (as of May 2012) extracted from Netserv Plan Part B.	State legislation and regulation is shown as driving a Compliance Plan.
"Compliance Plan" Revision 2, 4 April 2012	This document describes the global compliance system across legislative requirements and also contractual and internal requirements. It references a "Central Compliance Obligations Register".
Compliance obligations register	This is a comprehensive register of the industry-specific and other legislation.
"Guide to the Netserv Plan" Revision 2 June 2012	The South East Queensland Water (Distribution and Retail Restructuring) Act 2009 and the Sustainable Planning Act 2009 are specifically referenced.
Compliance Checklist Annual Report 2011-12[5]	A large number of generic requirements are listed and cross-referenced against statements in the Annual Report.

[4] Accessed from http://unitywater.com/About-us/Publications-scheme-1.aspx on 31 July 2013
[5] Accessed from http://unitywater.com/About-us/Publications-scheme-1.aspx on 31 July 2013

Major governing documents supplied/accessed	Issues arising from Unitywater's documents
"Audited financial statements for 2011-12"	The audit opinion on this most recent set of financial statements, dated 30 August 2012, was unqualified, indicating that the Queensland Audit Office did not discover any significant instances of non-compliance with the Financial Accountability Act, the Standard or the State's Procurement Policy (as it then was).
"Capital Works Planning Manual" Revision 6, dated 5 May 2013	The following Acts are specifically referenced: • South East Queensland Water (Distribution and Retail Restructuring) Act 2009 • Sustainable Planning Act 2009 • Water Supply (Safety and Reliability) Act 2008 • Environmental Protection Act 1994 • Water Act 2000

SKM considers that the capital expenditure policies and procedures meet the compliance requirement and are robust.

As required by the Water Act 2000, Unitywater also publishes customer service standards[6] covering water supply interruptions, quality, pressure and volume and also customer response. These are largely set by Unitywater itself, and these vary between South-East Queensland water utilities. They are listed as inputs to the Capital Works Planning Manual and the Netserv Plan Part B.

3.2.11 Considers regional perspective

The South East Queensland Water (Distribution and Retail Restructuring) Act 2009 outlines the regional requirements for the netserv plans[7].

Also, among other things, the Bulk Water Supply Code intends to "*encourage co-ordinated network planning between the bulk and the distribution sectors to achieve infrastructure planning (including water quality improvements) on a best value for money basis*." [8]

The Capital Works Planning Manual does not have provisions to address these regional requirements at key decision points. It does not comply with this requirement.

The Netserv Plan Part B does not have provisions to address the regional requirements of the South East Queensland Water (Distribution and Retail Restructuring) Act 2009. It does not comply with this requirement.

Unitywater has recently undertaken a Treatment Services Strategy to consider a high level strategic review of how it provides treatment plant services over the entire region, both in the short term and long term. This clearly demonstrates consideration of the prudency and the efficiency of expenditure from a regional basis.

3.2.12 Procurement

Adoption of good industry practice in procurement helps ensure that goods and services have been acquired on an efficient and prudent basis. Results-based principles and practices are set down in the Queensland Procurement Policy as well as in the *Public Expenditure and Financial Accountability Framework* and similar frameworks adopted internationally by the World Bank and other international agencies.

[6] Accessed from http://unitywater.com/customer-charter on 15 August 2013
[7] The term is not capitalised in the legislation.
[8] http://www.dews.qld.gov.au/__data/assets/pdf_file/0013/32305/bulk-water-supply-code.pdf section 13

The good industry practices for the procurement of goods and services are:

- Procurement policy
  - It is comprehensive and adopts competitive procurement as the default method
  - It clearly defines when other methods can be used and how they are justified
  - It is freely available to the public
    - Strategy – there is an active multi-year strategy to identify cost-saving opportunities that become available
    - Competition – contracts are awarded by open competition unless otherwise justified
    - Transparency
  - The public has ready access to procurement plans, bidding opportunities, evaluation criteria, and the results of tenders and requests for offer
  - Evaluation processes are documented and subject to independent audit
  - Losing bidders are offered feedback
    - Complaints handling
  - There is an independent process for reporting and resolving complaints from bidders and potential bidders

These practices have been incorporated into Unitywater's Procurement and Disposals Policy, except that the multi-year strategy to achieve cost savings is a generic one driven by the processes to achieve the financial goals in the Corporate Strategic Plan, as noted in Section 3.3.2 – Operating budget formation.

Unitywater published its annual Forward Procurement Schedule on 29 August 2013[9]. Under the new Queensland Procurement Policy (June 2013) agencies are not required to publish forward procurement schedules unless "it will be of benefit to either the agency or supply market". As Unitywater generally open tender most of our procurements, and our supply markets are reasonably limited, Unitywater does not see the need for publishing all of our intentions in future.

SKM considers that Unitywater's procurement policies and procedures are in accordance with good industry practice and are robust.

3.3 Operating expenditure policies and procedures

3.3.1 Good industry practice

In a regulated business it is necessary to demonstrate that a forecast operating costs budget is efficient and that the expenditure is necessary to maintain the required level of regulated service delivery, to meet or exceed regulated service delivery standards. Equally as important is the necessity to ensure efficient operation of assets delivering regulated services to enable them to continue to contribute to the regulated services efficiently over their remaining economic or specified life.

A further objective of operating costs budgeting is to achieve ongoing efficiency improvements of operational assets. Therefore, good industry practice for appropriate operating costs budgeting is generally based on the development of sound asset management and maintenance strategies that can improve the reliability and remaining operating life of assets. These strategies are in turn, based on detailed and accurate asset registers that contain detailed asset information, not least:

- Asset age
- Installation/commissioning dates

[9] It is available at https://secure.publicworks.qld.gov.au/etender/tender/display/tender-details.do?id=10066&action=display-tender-details

- Date and nature of major modifications/upgrades
- Asset condition
- Remaining asset life

The starting point for measuring the efficiency of operating costs budgeting should be the *actual* expenditure in a base year. This should be assessed for efficiency and adjusted, if necessary, to a level considered to be reasonably efficient. Future-year operating costs forecasts are then based on extrapolating these base year costs against appropriate indices, taking into account planned and expected material changes to the asset base in future years and material changes in operation and maintenance practices.

A regulated utility's forecast operating costs over the upcoming regulatory period is an important input to the revenue forecasting process.

Typically, a regulator must review the extent to which the forecast operating costs are consistent with the provision of an annual revenue requirement consistent with the general regulatory principles of the regulated industry in question. These principles are that the allowed annual revenue requirement or maximum allowable return must fairly compensate the regulated utility for the economically efficient costs and risks it incurs in providing regulated services, to encourage:

- A stable and transparent commercial environment which does not discriminate between users
- The same market outcomes as would be achieved if the market for its regulated services was contestable
- Competition in the provision of its regulated services wherever practicable
- The commercial viability of the regulated utility, through the recovery of efficient costs associated with the regulated services, and a reasonable return on the utilities approved capital invested in its regulated assets and business systems
- Recovery of only those costs related to the provision of the regulated services
- Fairness in the charges made for the regulated services, including the progressive removal of cross-subsidies
- Maintenance of service delivery levels subsisting at the beginning of a regulatory period and an improvement of service delivery levels during the period contemplated by a regulator's final decision
- Maintenance of the regulated assets such that, at the end of regulatory period, the regulated assets are able to continue to provide regulated service delivery without above-average expenditure on upgrades or critical maintenance and continue the service delivery levels previously achieved

The nature of operating costs means there are elements that are controllable, such as deferring or bringing forward maintenance, or the amount of overtime worked. Moving to outsourcing or contracting some services can lead to apparent changes in operating costs within affected categories, particularly if the contracted services appear against a different operating costs category (for example, moving maintenance to "admin and general" if this is how the contracted services are categorised).

To understand the efficient level of operating costs requires an understanding of these underlying drivers, and the extent to which operational and accounting decisions will affect operating costs in individual years and over a regulatory period being reviewed.

Where operating costs vary from one year to another, a regulator will by necessity seek information that explains the underlying causes of these variations to determine the representative level of operating costs for an efficient base year.

This reasonably efficient level of expenditure should then be escalated forward through each year of the regulatory period under review, on the basis of its sensitivity to changes in the key drivers of an expenditure category and recognising material changes in the asset base in future years. For example, the key driver of

meter-reading costs is likely to be customer numbers, since meter reading costs will increase as the number of customer accounts increase[10].

In undertaking this analysis, due account should be taken of the sensitivity of expenditure in a particular cost category to its key cost driver. Meter-reading costs, for example, have a high variable cost component and will therefore be very sensitive to customer numbers, whereas customer account supervision costs are largely fixed and will be much less sensitive to customer numbers. Historical expenditure trends in a particular cost category may be analysed to help assess the appropriate sensitivity of expenditure to a key cost driver. Similarly, plant operating costs will be split between fixed and volume-related costs.

Equally, customer densities, terrain over which the regulated assets are built, climate and economic conditions (such as strength of an economy and resultant impact on contractor costs), can impact on a regulated industries operational expenditure. These variations in the cost drivers of utilities require careful use of benchmarking between utilities to avoid misleading comparisons.

3.3.2 Operating budget formation

Unitywater's operating budget process is a combination of top down and bottom up processes that are applied to the elements of the budget:

- The base (business-as-usual) budget
- Permanent changes to the base
- Temporary changes to the base
- Cost escalations applied according to type of input

The process links to Unitywater's Strategic Plan 2013-18 which provides stretch targets to achieve reductions in the cost to serve from $628 in 2011-12 to $560[11] by 2017-18. As part of these targets, Unitywater is aiming to achieve 5% savings from its 2012-13 actual support costs in 2013-14. While these savings were not incorporated into the 2013-14 budget, they are included as KPIs in the performance management plans of the top three levels of management, who have part of their remuneration at risk.

The Netserv Plan Part B – Corporate Services Plan (2012) states that:

> *"… budgets will be built and challenged with internal efficiency targets reflecting at least the QCA's deemed 2% compounding targets. PMPs (Performance Management Plans) will be influenced to at least accommodate expected cost increases for expenditure, and maintain operating margins and credit metrics (such as Unitywater's credit rating)."*

Other top-down measures include an enforced 4% vacancy rate across divisions.

From a bottom-up perspective, full-time-equivalent staff numbers and materials and services costs are worked through at branch manager level, before the draft budget is formulated and reviewed at higher levels.

There are separate processes for estimating employee costs in detail and for materials and services. Energy costs are based on an historical analysis of running times and usage at pumping stations and sewerage treatment plants, and similarly for chemical costs at sewerage treatment plants.

When the annual budget is compiled, with the impacts of the capital plan included, it is reviewed by the Executive Leadership team before being approved by the Board.

From a medium-term perspective, Unitywater has an active multi-year program to achieve the cost targets in its Strategic Plan through:

[10] The number of customer accounts is considered a more relevant driver than the number of active meters since most of a meter reader's time is spent moving from one customer to the next.
[11] Operating cost per water connection in constant 2013-14 dollars

- A number of steps to reduce electricity and chemical costs, including through market tendering, rationalisation of pump stations and the use of new technology
- The introduction of some more efficient and equitable workforce practices, such as staggered working times, afternoon shifts for field staff, and on-site start and finish work arrangements
- The establishment of the Business Improvement Office to review and approve business improvement opportunities on a case by case basis

An area in which the budget process could potentially be improved is through the development of a benchmarking process to compare controllable operating costs with those of similar entities and thereby help identify areas where cost efficiencies can be made. However, this would require the development of an externally facilitated process more detailed than that of the National Water Commission's and cost-based audits of the type commissioned by OFWAT). Specifically, the external process would require information on particular operating cost items and functions, while the cost audit process would ensure valid comparisons can be made of these cost items and functions between the entities.

3.3.3 Compliance

As well as generic legislation, Unitywater needs to comply with the following specific regulatory requirements in its operations:

- Water Act 2000
- Water Supply (Safety and Reliability) Act 2008
- Sustainable Planning Act 2009
- Environmental Protection Act 1994
- Environmental Protection (Water) Policy 2009
- Plumbing and Drainage Act 2002
- Public Health Regulation 2005
- Australian Drinking Water Quality Guidelines
- South East Queensland Water (Distribution and Retail Restructuring) Act 2009
- Water and Sewerage Services Code for Small Customers in South East Queensland 2013
- Financial Accountability Act 2009
- Financial and Performance Management Standard 2009
- Queensland Procurement Policy

The Financial Accountability Act 2009 and the associated Financial and Performance Management Standard 2009 set out the financial management and reporting responsibilities of statutory bodies in Queensland, including Unitywater. As well, it mandates compliance with the Queensland Procurement Policy. The Auditor-General is responsible for giving an opinion on whether these requirements have been complied with in all material respects.

SKM has reviewed Unitywater's major operating expenditure governing documents supplied with the results shown below.

Major governing documents supplied	Issues arising from Unitywater's documents
Unitywater Code of Conduct Policy[12]	The South East Queensland Water (Distribution and Retail Restructuring) Act 2009, and 10 generic Acts are specifically referenced.

[12] Accessed from http://unitywater.com/About-us/Publications-scheme-1.aspx on 31 July 2013

Major governing documents supplied	Issues arising from Unitywater's documents
"Unitywater Corporate Strategic Plan 2013-14 to 2017-18"	The South East Queensland Water (Distribution and Retail Restructuring) Act 2009 is specifically referenced.
"Unitywater Netserv Plan Part A". The document was a consultation draft and did not have an applicable date or version.	Environmental and licence compliance is addressed on page 35. Meeting legislative obligations generally is addressed on pages 44 and 46. The Sustainable Planning Act 2009 is specifically referenced on page 97.
"Netserv Plan Part B Corporate Services Plan Governance Arrangements" Revision 2, June 2012	The following industry-specific Acts are specifically referenced: • Sustainable Planning Act 2009 • SEQ Water (Distribution and Retail Restructuring) Act 2009 • Water Act 2000 • Fairer Water Prices for SEQ Amendment Act 2011 • Queensland Competition Act 1997 • Environmental Protection Act 1994 • Water Supply (Safety and Reliability) Act 2008 • Market Rules - QWC
"Netserv plan framework diagram" (as of May 2012) extracted from Netserv Plan Part B.	State legislation and regulation is shown as driving a Compliance Plan.
"Compliance Plan" Revision 2, 4 April 2012	This document describes the global compliance system across legislative requirements and also contractual and internal requirements. It references a "Central Compliance Obligations Register".
Compliance obligations register	This is a comprehensive register of the industry-specific and other legislation.
"Guide to the Netserv Plan" Revision 2 June 2012	The South East Queensland Water (Distribution and Retail Restructuring) Act 2009 and the Sustainable Planning Act 2009 are specifically referenced.
Compliance Checklist Annual Report 2010-2011[13]	A large number of generic requirements are listed and cross-referenced against statements in the Annual Report.
"Maintenance Strategy Implementation – Asset Maintenance Plan" 20 March 2013	Legislative issues are considered at 06 in its approval, but not in a specific manner.
"Netserv Plan Part B Asset Management Plan for Network and Treatment Assets" version 2, June 2012	The South East Queensland Water (Distribution and Retail Restructuring) Act 2009 and the Fairer Water Prices for SEQ Amendment Act (2011) are specifically referenced.

From its review, SKM considers that the operating expenditure policies and procedures meet the compliance requirement and are robust.

3.3.4 Asset management system

Good industry practice for asset management is currently specified by PAS 55-1:2008, the Publicly Available Specification for Asset Management Part 1 Specification for the optimized management of physical assets. According to the Institute of Asset Management "*PAS 55 was initiated by and is now distributed and supported worldwide through the Institute of Asset Management.*"[14] For an organisation where "*physical assets are a key or critical factor in achieving its business goals*" PAS 55 sets out an "*international consensus about required good practices in the management of such physical assets*"[15].

A similar draft ISO standard is currently being developed, Draft International Standard ISO/DIS 55001 Asset management — Management systems — Requirements. According to the Asset Management Council of Australia this new ISO standard will "*specify the requirements for an asset management system to manage*

[13] Accessed from http://unitywater.com/About-us/Publications-scheme-1.aspx on 31 July 2013
[14] http://theiam.org/products-and-services/pas-55/what-pas55 as at 13 September 2013
[15] PAS 55 Foreword

assets and asset systems over their life cycles"[16]. Therefore once implemented, this standard will specify good industry practice.

Unitywater has advised that its asset management systems have been developed in accordance with PAS 55-1:2008.

SKM has reviewed the following documents against the requirements of PAS 55-1:2008 with the results as shown in the following table:

- "Netserv Plan Part B Asset Management Plan for Network and Treatment Assets" version 2, June 2012
- "Maintenance Plan Infrastructure Assets" version 1, August 2013
- "Infrastructure (Water and Sewerage) Asset Management Policy" Revision 001 dated 4 September 2012
- "Condition Assessment and Consequence Rating Manual" Revision 1, December 2011
- "Asset Management Improvement Plan for Network and Treatment Assets" Draft, June 2013

PAS 55 Section reference	Asset management system requirements	Issues arising from "Netserv Plan Part B Asset Management Plan for Network and Treatment Assets"
4.1	General requirements	Compliant and robust
4.2	Asset management policy	Compliant and robust
4.3	Asset management strategy, objectives and plans	4 broad strategies outlined in Table 2-1. Compliant but not robust. 3 broad objectives outlined in section 1, and in Table 2-1. KPIs set out in section 6. Compliant but not robust. Asset Management Plans: This document appears to partially address this level of plan. Incomplete.
4.4	Asset management enablers and controls	Structure etc. — Compliant and robust Outsourcing — Not applicable Training etc — Not included Communication — Partially described in section 4.2 Documentation — Described in section 4.2 Information — Partially described in section 4.2 Risk management — Mentioned at tables 5-6 and 5-7. Incomplete Compliance — Partially described in section 3.1 Change — Partially addressed in sections 8, 9, 10 and 11
4.5	Implementation of asset management plan(s)	Partially described in section 3.1
4.6	Performance assessment and improvement	Partially described in section 6.2
4.7	Management review	Partially described in section 3.1

Unitywater has not yet fully implemented its Consolidated Asset Management System which will allow it, amongst other things, to more efficiently assess the condition of its properties, to prioritise their maintenance and to better manage its fleet of heavy and light vehicles and plant and equipment.

Based on the documents supplied, the asset management system is not in accordance with good industry practice and is not robust.

Unitywater has targeted the following projects for improvement in asset management:

[16] http://www.amcouncil.com.au/asset-management-body-of-knowledge/asset-management-standards/333-why-an-asset-management-standard-is-needed.html as at 13 September 2013

- Strategy Review including Metrics and Targets by 1 July 2014
- All current maintenance activities documented by December 2013
- Achieve Core Competencies as defined in Asset Management Maturity Index (Table 2.1.2), International Infrastructure Management Manual 2011 and assessed by WSAA Aquamark Framework by 1 July 2014

Additionally, Unitywater participated in the IWA/WSAA Aquamark benchmarking program. The report "2012 Asset Management Performance Improvement Project Utility Report for Queensland Unitywater Final Report October 2012" indicated the asset management performance of Unitywater was at the median of the water authorities in one out of seven areas, and below the median for the remaining six.

3.4 Conclusion

As detailed above, the requirements of Section 3.1 are addressed by the documents reviewed as summarised in the table below.

Requirements	Capital expenditure policies and procedures	Operating expenditure policies and procedures
Has a standardised approach to cost estimating	Compliant, but not robust	Not applicable
A summary document is prepared	Compliant and robust	Not applicable
An implementation strategy is prepared	Compliant and robust	Not applicable
Has a gateway review process	Not compliant	Not applicable
Includes detailed analysis of options for major projects	Compliant and robust	Not applicable
Has a benefits realisation assessment process	Not compliant	Not applicable
Includes requirements to comply with relevant legislation	Compliant and robust	Compliant and robust
Includes requirements to take account of regional issues.	Not compliant	Not compliant
Only commissioned capital expenditure from 1 July 2010 is included in the RAB	Not compliant	Not applicable
Overall capital expenditure program and delivery processes	Not compliant	Not applicable
Asset management in accordance with good industry practice	Not compliant	Not compliant
Procurement in accordance with good industry practice	Compliant and robust	Compliant and robust
Budget formation in accordance with good industry practice	Compliant and robust	Compliant and robust

4. Operating expenditure

4.1 Overview of operating expenditure

A breakdown of Unitywater's operating expenditure for the price monitoring period (financial years 2013-14 and 2014-15) is provided in Table 4.

Over this period, Unitywater predicts that its total operating expenditure (excluding bulk water charges) will increase from $296.2 million (2011-13) to $299.1 million (2013-15), which represents a total increase of $2.9 million or approximately 1%. The forecast expenditure in 2013-14 is $5.2 million higher than expenditure in 2012-13, which is an increase of 3.6%.

Table 4 : Total operating expenditure (values in nominal $)[17]

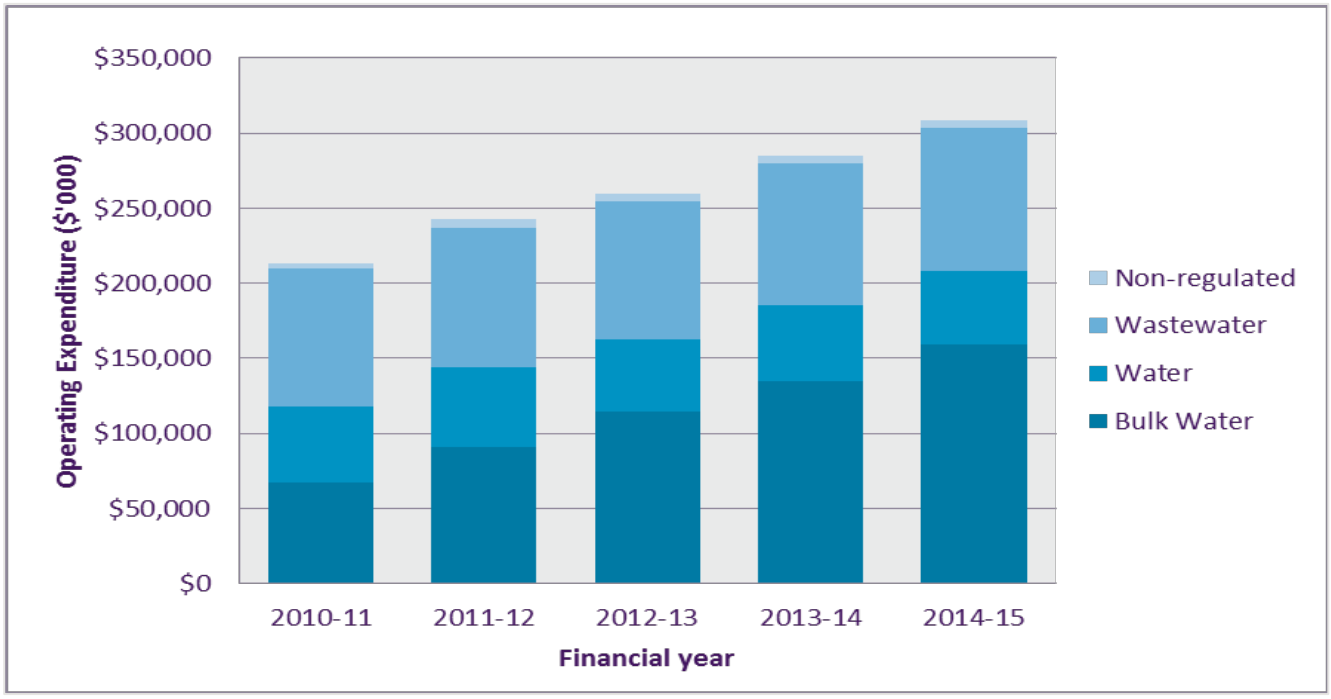
Service	2010-11 ($'000s)	2011-12 ($'000s)	2012-13 ($'000s)	2013-14 ($'000s)	2014-15 ($'000s)
Bulk water	67,660.8	91,030.2	114,938.5	134,912.5	158,942.1
Water	50,145.5	53,058.7	48,058.7	50,731.1	49,350.5
Wastewater	91,754.4	93,015.3	91,162.7	94,062.2	94,760.2
Non-regulated	3,568.3	5,474.6	5,402.6	5,060.1	5,124.8
Total	213,129.0	242,578.8	259,562.4	284,766.0	308,177.5
Total less Bulk water	**145,468.2**	**151,548.6**	**144,623.9**	**149,853.4**	**149,235.4**

Figure 4-1 below provides an overview of the operating expenditure as detailed by Unitywater in its submission to the Authority. The main points to be drawn from the graph of annual operating expenditure from the 2012-13 financial year to the 2014-15 financial year are that, across the period, the water services operating expenditure (excluding bulk water costs) increases by 2.7%; the wastewater services operating expenditure increases by 3.9% and the non-regulated operating expenditure decreases by 5.1%. Over the same period, expenditure on bulk water (driven by both demand and unit price increase from the bulk water supplier) will increase by approximately 38%.

SKM noted that the forecast expenditures between 2013-14 and 2014-15 are relatively constant across each of the various services, with the total 2014-15 forecast expenditure approximately 0.4% lower than the 2013-14 forecast. The primary cost driver for the variance between the 2013-14 and 2014-15 forecast expenditures is the cost of bulk water, which increases by $24 million.

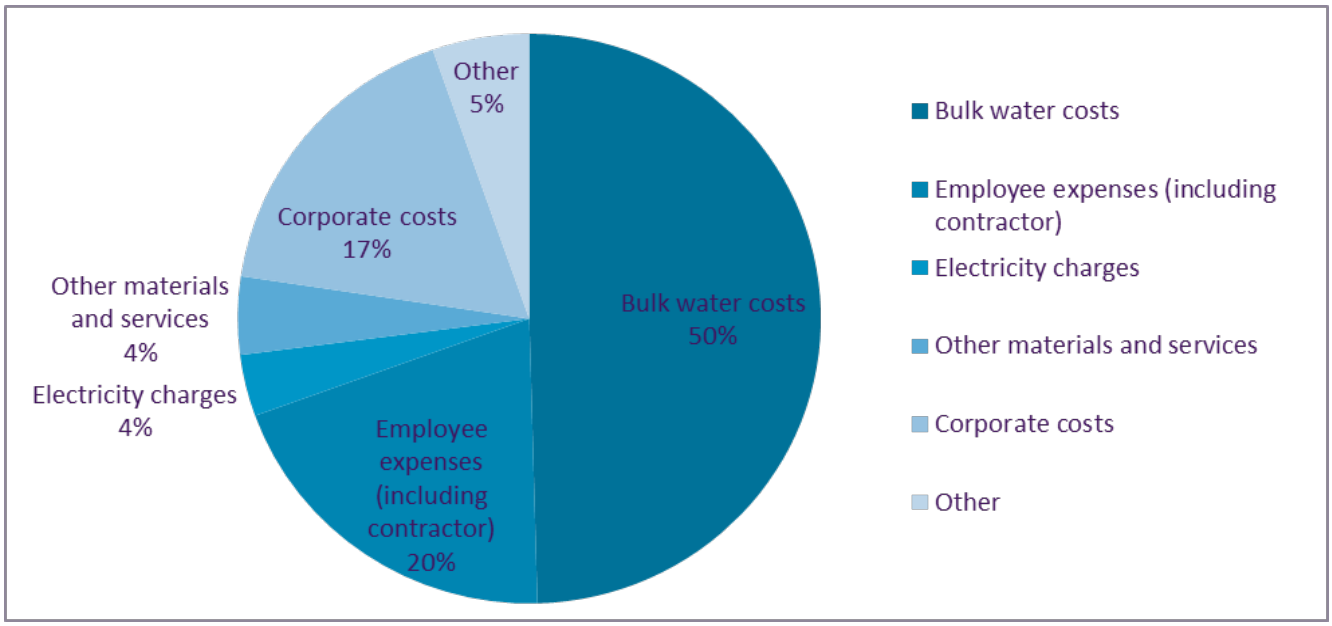
[17] QCA Information Template - Unitywater 2013-15 submission

Figure 4-1 : Total operating expenditure[18]



Unitywater has an operating expenditure budget of approximately $593 million (including bulk water charges) for the price monitoring period (financial years 2013-14 and 2014-15). The following figure indicates the breakdown of the operating expenditure budget in terms of the main cost categories. As is evident from the chart, the cost of purchasing bulk water is the main operating expenditure item.

Figure 4-2 : Total operating expenses for 2013-15 (including non-regulated costs)[19]



The following tables contain the cost breakdown of the different services, namely water, wastewater and non-regulatory services.

[18] ibid.
[19] QCA Information Template - Unitywater 2013-15 submission

Table 5: Water operating expenditure 2013-15 (values in nominal $'000s)[20]

Item	2012-13 ($'000)	2013-14 ($'000)	2014-15 ($'000)
Bulk water costs	114,938.5	134,912.5	158,942.1
Employee expenses	14,412.2	15,044.7	15,515.7
Contractor expenses	1,420.3	1,024.2	1,061.1
GSL Payments	-	-	-
Electricity charges	1,439.7	1,695.8	1,803.6
Sludge handling costs	-	-	-
Chemicals costs	174.7	205.3	217.5
Other materials and services	3,341.9	3,007.4	3,107.5
Licence or regulatory fees	38.5	83.8	86.9
Corporate costs	24,893.7	27,573.4	25,385.2
Non recurrent costs	1,589.1	1,383.4	1,433.8
Indirect taxes	748.7	713.2	739.2
Total water operating expenses	**162,997.2**	**185,643.6**	**208,292.6**

Table 6 : Wastewater operating expenditure 2013-15 (values in nominal $'000s)[21]

Item	2012-13 ($'000)	2013-14 ($'000)	2014-15 ($'000)
Bulk water costs	-	-	-
Employee expenses	31,926.8	33,115.9	34,152.5
Contractor expenses	6,476.9	6,927.8	7,177.5
GSL Payments	-	-	-
Electricity charges	7,134.0	8,170.3	8,689.7
Sludge handling costs	4,200.8	4,490.3	4,652.1
Chemicals costs	4,509.7	4,660.9	4,940.1
Other materials and services	7,790.9	8,066.0	8,334.6
Licence or regulatory fees	221.3	208.5	216.1
Corporate costs	23,450.5	24,705.0	22,744.4
Non recurrent costs	4,746.5	3,078.6	3,190.8
Indirect taxes	705.3	639.0	662.3
Total wastewater operating expenses	**91,162.7**	**94,062.2**	**94,760.2**

Table 7: Non-regulated operating expenditure 2013-15 (value in nominal $'000s)[22]

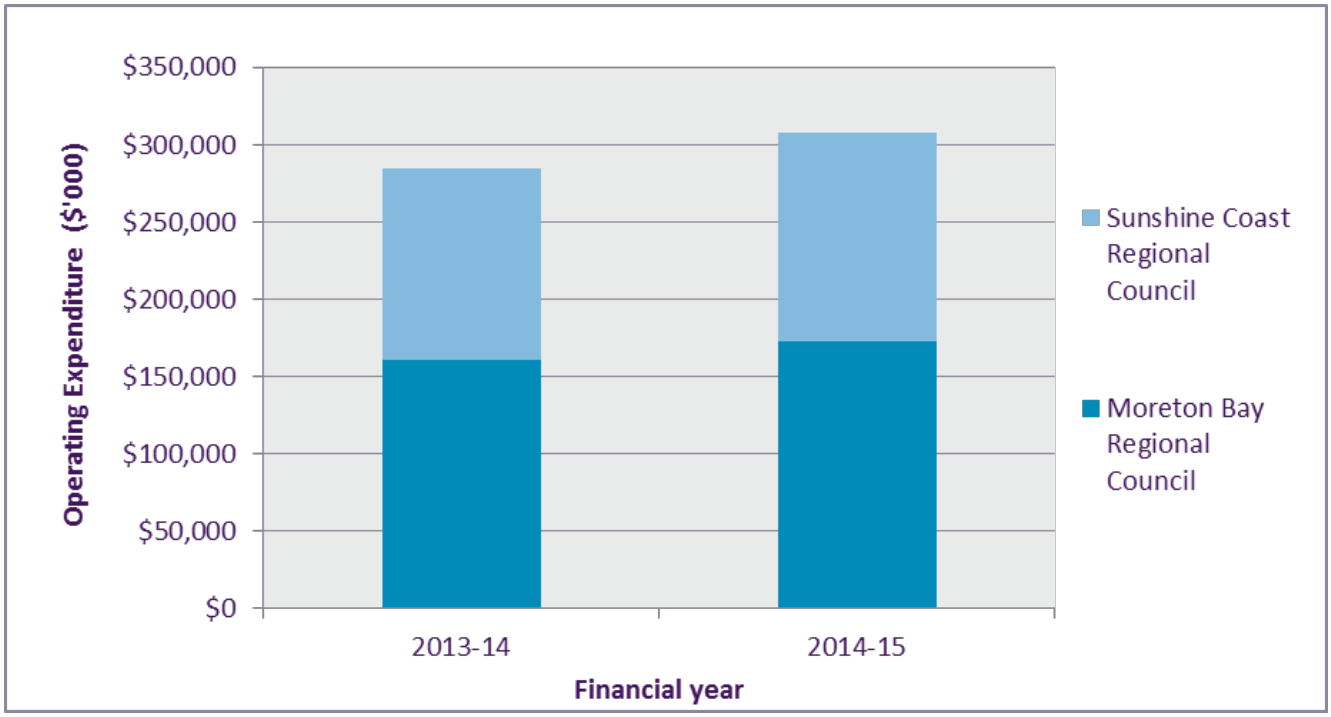
Item	2012-13 ($'000)	2013-14 ($'000)	2014-15 ($'000)
Bulk water costs	-	-	-
Employee expenses	1,828.2	1,693.6	1,746.6
Contractor expenses	354.9	285.9	296.2
GSL Payments	-	-	-

[20] QCA Information Template - Unitywater 2013-15 submission
[21] ibid.
[22] ibid.

Item	2012-13 ($'000)	2013-14 ($'000)	2014-15 ($'000)
Electricity charges	146.5	176.5	187.7
Sludge handling costs	-	-	-
Chemicals costs	114.6	80.4	85.2
Other materials and services	2,369.9	1,831.1	1,892.1
Licence or regulatory fees	0.1	0.1	0.1
Corporate costs	569.7	966.4	889.7
Non recurrent costs	1.6	1.1	1.1
Indirect taxes	17.1	25.0	25.9
Total non-regulated operating expenses	**5,402.6**	**5,060.1**	**5,124.8**

Figure 4-3 below demonstrates the makeup of operating expenditure for each region in Unitywater for the price monitoring period (financial years 2013-14 and 2014-15). As the graph indicates both regions are similarly sized with the Moreton Bay being marginally larger with 56% of the total expenditure operating expenditure over both years.

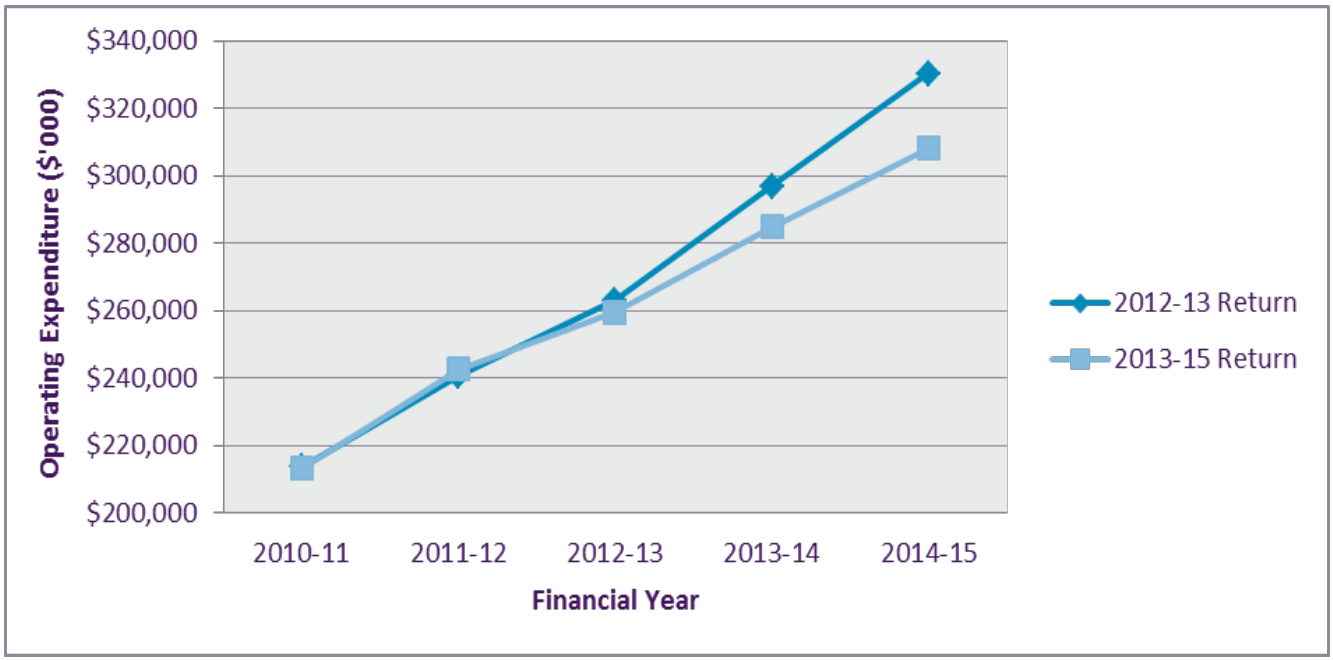
Figure 4-3 : Total operating expenditure per region



4.2 Historical costs and variances

A comparison is made between the forecast operating costs submitted by Unitywater in the 2013-15 information return and the 2012-13 information return in Figure 4-4 below. A moderate reduction in forecast operating expenditure is noted as compared to the 2012-13 information return.

Figure 4-4 : Comparison of forecasts – 2012-13 submission and 2013-15 submission



The variations between the 2013-15 and 2012-13 forecast operating expenditures are outlined in the following table.

Table 8 : Comparison of forecasts – 2012-13 and 2013-15 Submissions (values in nominal $'000s)[23]

Source	2010-11	2011-12	2012-13	2013-14	2014-15
Total operating expenditure					
2012-13 Information Template	213,666.2	240,683.2	263,085.1	296,811.0	330,341.9
2013-15 Information Template	213,129.0	242,578.8	259,562.4	284,766.0	308,177.5
Variance	-537.2	1,895.6	-3,522.7	-12,045.0	-22,164.4
Total operating expenditure – excluding bulk water costs					
2012-13 Information Template	149,721.5	148,188.9	148,146.6	155,610.1	162,703.1
2013-15 Information Template	145,468.2	151,548.6	144,623.9	149,853.4	149,235.4
Variance	-4,253.3	3,359.7	-3,522.7	-5,756.7	-13,467.7

The previous table and figure detail a decrease of $3.5 million in total operating costs for the 2012-13 financial year and forecasts reduction from last year's estimates of $12.0 million and $22.2 million in 2013-14 and 2014-15 respectively.

Expenditure on bulk water is not a cost that is controllable by Unitywater with volumes driven by consumer demand and growth, and unit prices determined externally. As such, SKM has also compared forecast operating costs excluding bulk water expenditure in Table 8. The results show that the 2013-15 Information Template forecasts a decrease in operating expenditure (less bulk water expenditure) for the interim price monitoring period as compared to the 2012-13 Information Template.

[23] Information Template 2012/13, Information template 2013/14

The Authority's information requirement specifies that information should be allocated to relevant service types. SKM has compared the forecast operating expenditure by service type with the 2012-13 Information Template. This analysis is summarised in Table 9.

Table 9 : Comparison of forecasts by service type – 2012-13 and 2013-15 Submissions (values in nominal $'000s)

Service	2013-14 FY			2014-15 FY		
	2012-13 Return	2013-15 Return	Difference	2012-13 Return	2013-15 Return	Difference
Drinking water	187,388.9	183,917.2	-3,471.7	216,306.3	206,503.7	-9,802.6
Other core water services	9,448.3	1,726.4	-7,721.8	9,916.5	1,788.9	-8,127.6
Wastewater via sewer	91,094.7	91,946.4	851.7	94,794.8	92,616.2	-2,178.6
Trade waste	2,185.9	2,115.8	-70.2	2,248.4	2,144.0	-104.5
Other core wastewater services	1,866.1	0.0	-1,866.1	1,972.1	0.0	-1,972.1
Non-Regulated	4,827.0	5,060.1	233.1	5,103.7	5,124.8	21.0
Total	**296,811.0**	**284,766.0**	**-12,045.0**	**330,341.9**	**308,177.5**	**-22,164.4**

The data demonstrates that the largest value variances between the 2012-13 Information Template and the 2013-15 Information Template are the Drinking Water and the Other Core Water Services categories.

For Drinking Water, the forecasts have reduced by $3.5 million (1.8%) and $9.8 million (4.5%) for the 2013-14 and 2014-15 financial years respectively. For Other Core Water Services the forecasts have reduced by $7.7 million (81.7%) and $8.1 million (82.0%) for the 2013-14 and 2014-15 financial years respectively. The data shows that in the 2013-15 Information Template Unitywater has forecast an increase of $0.9 million in the Wastewater via Sewer service for 2013-14 and no increases in operating costs for non-regulated services for 2014-15.

SKM has further examined that the operating cost categories that show the greatest variance for the drinking water, wastewater via sewer and trade waste services. These are summarised in Table 10 and Table 11.

Table 10 : Comparison of 2013-14 operating expenditure forecast by category – 2012-13 and 2013-15 submissions

Service	Category	Operating expenditure (nominal $'000s)		
		2012-13 return	2013-15 return	Variance
Drinking Water	Bulk water costs	141,200.8	134,912.5	-6,288.3
	Employee expenses	20,038.5	14,734.0	-5,304.6
	Other materials and services	8,214.9	2,905.3	-5,309.6
	Corporate Costs	13,058.9	27,573.4	14,514.5
Other core water services	Employee expenses	5,481.7	1,334.9	-4,146.8
Wastewater via sewer	Other materials and services	13,009.3	8,014.6	-4,994.6
	Corporate Costs	18,529.6	24,352.3	5,822.6

Table 11 : Comparison of 2014-15 operating expenditure forecast by category – 2012-13 and 2013-15 Submissions

Service	Category	Operating expenditure (nominal $'000s)		
		2012-13 return	2013-15 return	Variance
Drinking Water	Bulk water costs	167,638.8	158,942.1	-8,696.7

Service	Category	Operating expenditure (nominal $'000s)		
	Employee expenses	20,741.4	15,198.3	-5,543.1
	Other materials and services	8,581.0	3,002.0	-5,578.9
	Corporate Costs	13,825.0	25,385.2	11,560.2
Other core water services	Employee expenses	5,721.1	1,378.5	-4,342.7
Wastewater via sewer	Other materials and services	13,656.4	8,281.5	-5,374.8
	Corporate Costs	18,404.1	22,419.7	4,015.6

The tables show that the main price increase for 2013-14 and 2014-15 is in the area of Corporate Costs. All of the other categories that record a significant variance are decreases from the previous submission data.

The 2013-15 forecast includes a reduction in bulk water costs. This is due to a reduced forecast in demand and the reduced bulk water price path that was announced in May 2013. This includes a reduction of 2.5 c/kL in 2013-14 and 5 c/kL in 2014-15.

4.3 Costs in aggregate

Unitywater's submission to the Authority shows an increase in operating expenditure for each financial year of the forecast as is shown in the following table.

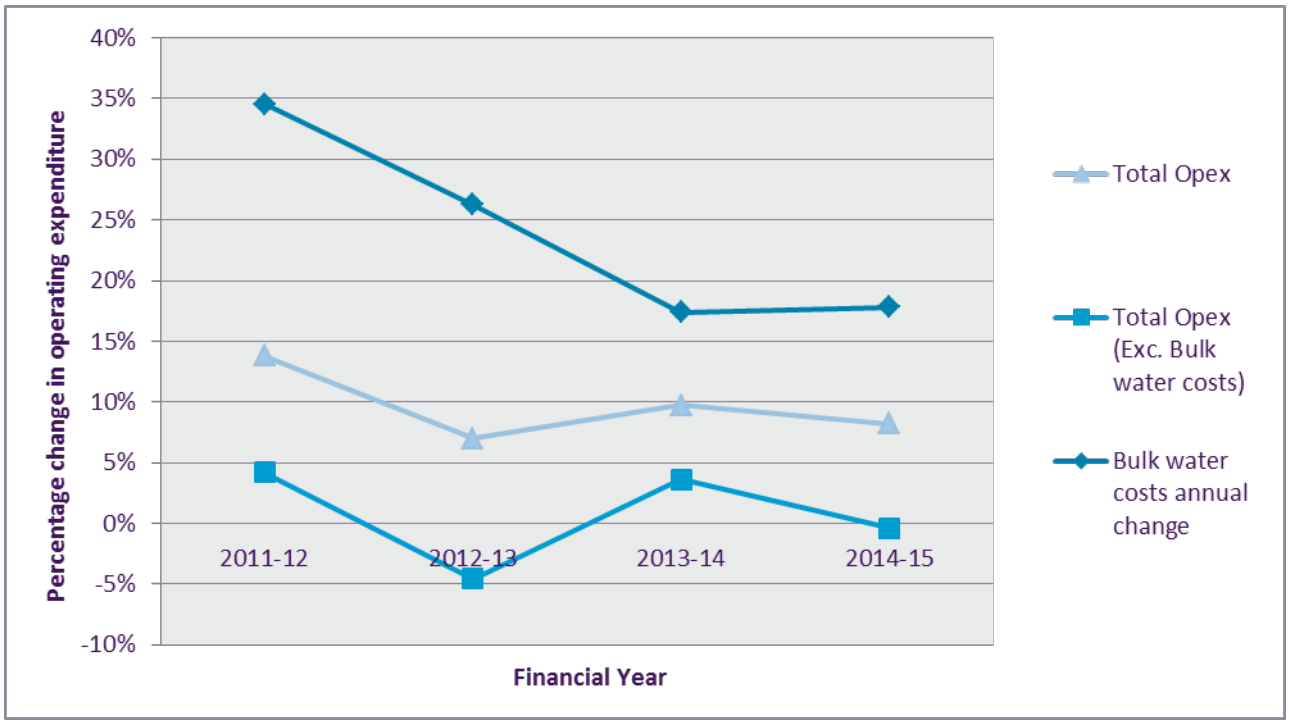
Table 12: Unitywater annual operating expenditure (values in nominal $'000s)[24]

Financial Year	Operating Expenditure incl Bulk Water	Annual Variance Percentage (incl Bulk Water)	Bulk Water charges	Bulk Water Annual Variance Percentage	Operating Expenditure excl Bulk Water	Annual Variance Percentage (excl Bulk Water)
2010-11	213,129	-	67,661	-	145,468	-
2011-12	242,579	13.8	91,030	34.5	151,549	4.2
2012-13	259,562	7.0	114,939	26.3	144,624	-4.6
2013-14	284,766	9.7	134,913	17.4	149,853	3.6
2014-15	308,178	8.2	158,942	17.8	149,235	-0.4

The increases are above annual inflation rates, which for the five years preceding 2013 was approximately in the range of 1.0 to 4.0%. SKM has noted that although Unitywater's annual variances in operating expenditure show a decrease over the period 2011-12 to 2014-15 that is similar to the path taken by the bulk water charges there is little similarity in the data. This suggests that factors in addition to the bulk water costs are influencing Unitywater's operating cost increases.

[24] QCA Information Template - Unitywater 2013-15 submission

Figure 4-5 : Annual changes in expenditure – 2013-15 Return



The influence of bulk water cost escalation on forecast operating cost increases is demonstrated in Unitywater's 2013-15 Information Template. The bulk water charges are predicted to be 47.4% of the total operating expenditure in the 2013-14 financial year and to increasing to 51.6% of the total operating expenditure in the 2014-15 financial year.

4.4 Benchmarking

4.4.1 Comparability of data

SKM has completed high level benchmarking of Unitywater against other water utilities located in Australia and Great Britain. Unitywater's performance against other utilities is discussed below, however due to the high level of this assessment and data availability, direct savings cannot be identified. The various differences between water utilities affect the validity of benchmarking Unitywater's operating expenditure against other utilities. SKM is aware of differences between Australian and Great Britain water markets which must be considered when comparing water utilities. Aspects such as climate (temperature, rainfall, storm events etc), topography, service areas, connection density, location (rural or urban), technologies used, asset age, regulations, bulk water supply, consumer expectations, years of operation, labour requirements, levels of service, taxation and water quality standards are just some of the factors which influence operating expenditure.

The operating expenditure data of other Australian utilities was obtained from the National Water Commission's National Performance Report 2011-12 and the 2013-14 Information Template for Unitywater. Some of the major utilities used for Australian benchmarking are shown below in Figure 4-6 and Figure 4-7. Hunter Water Corporation, Australian Capital Territory Electricity and Water (ACTEW) and Barwon Water have a similar number of connections to Unitywater for both water and wastewater. Australian benchmarking will focus on Baron Water, ACTEW and Hunter Water Corporation as the main comparators to Unitywater.

Figure 4-6 : Number of water connections per utility

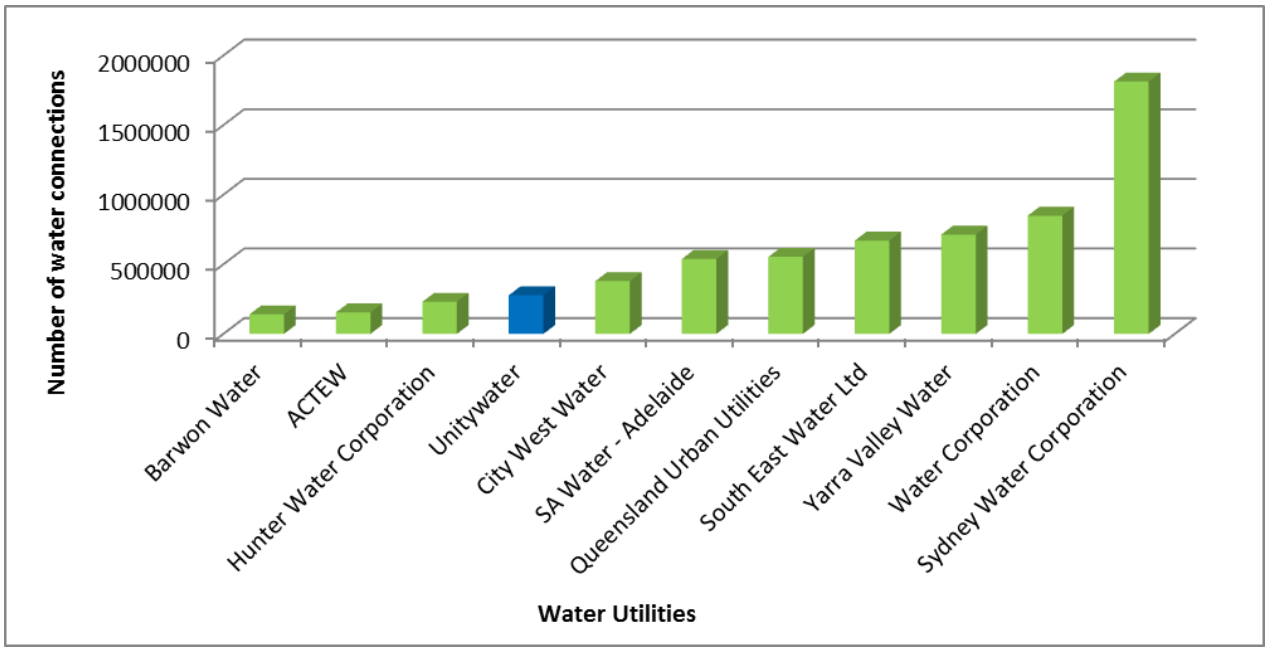
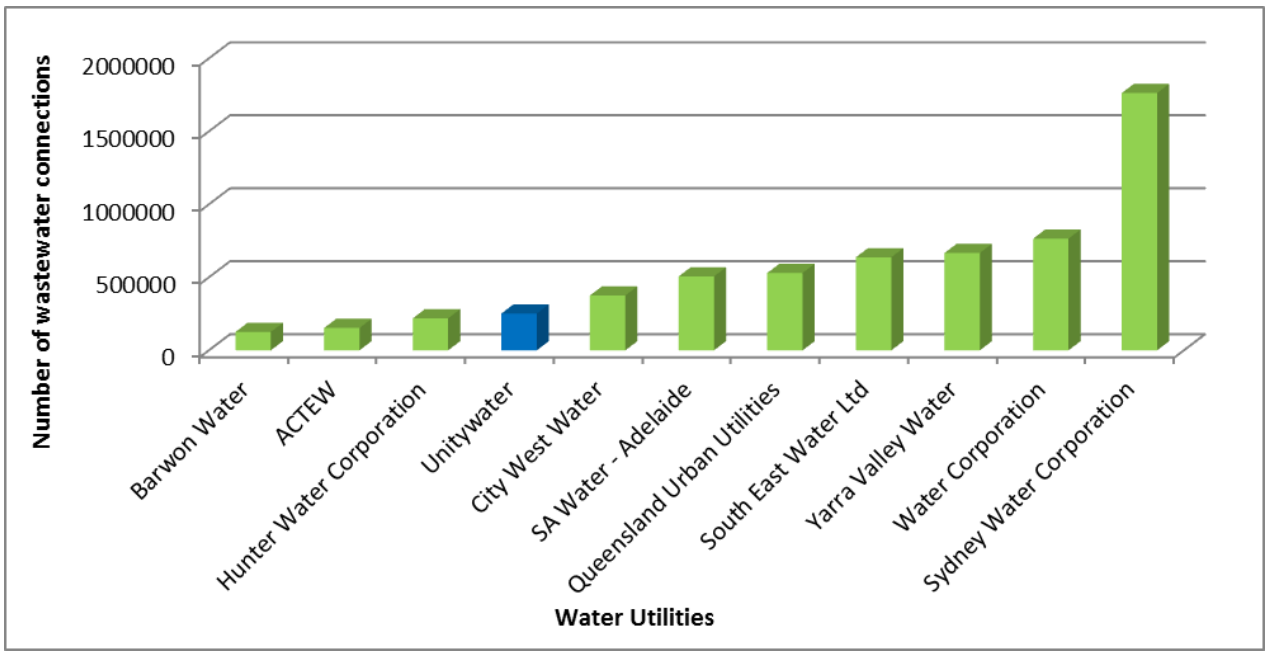


Figure 4-7 : Number of wastewater connections per utility



The data utilised for international benchmarking was provided by Scottish Water and obtained from regulatory submissions to The Water Services Regulation Authority (UK) (Ofwat) for the 2010-11 financial period. The Unitywater data was obtained from the 2013-14 Information Template. The water utilities used for comparison against Unitywater are located only in Great Britain as benchmarking data from other countries was not available for comparison.

The water and wastewater industry in Great Britain is expected to be more efficient because of its incentive regulation regime and the focus on privatisation. The regulatory processes applied in Great Britain of past years were developed to drive out inefficient costs through developing a system of measurement of overall

performance and comparative efficiency, and through the setting of measurable efficiency targets for operating costs, maintenance costs and capital expenditure.

Another issue with the comparison of international water utilities is that the treatment of bulk water and water security costs are different across jurisdictions given the different governance structures of the industry. The operating expenditure for Unitywater incorporates some return on capital investments at the bulk level which is due to the structure of the industry and the charges that Unitywater pays to the bulk water provider.

The Great British water utilities used for comparison with Unitywater are shown below in terms of number of water and wastewater connections. Figure 4-8 and Figure 4-9 show that all Great Britain utilities have a higher number of connections than Unitywater. Although higher than Unitywater, Wessex has the most comparable amount of water and wastewater connections to Unitywater and will be used for comparison.

Figure 4-8 : Number of water connections per utility

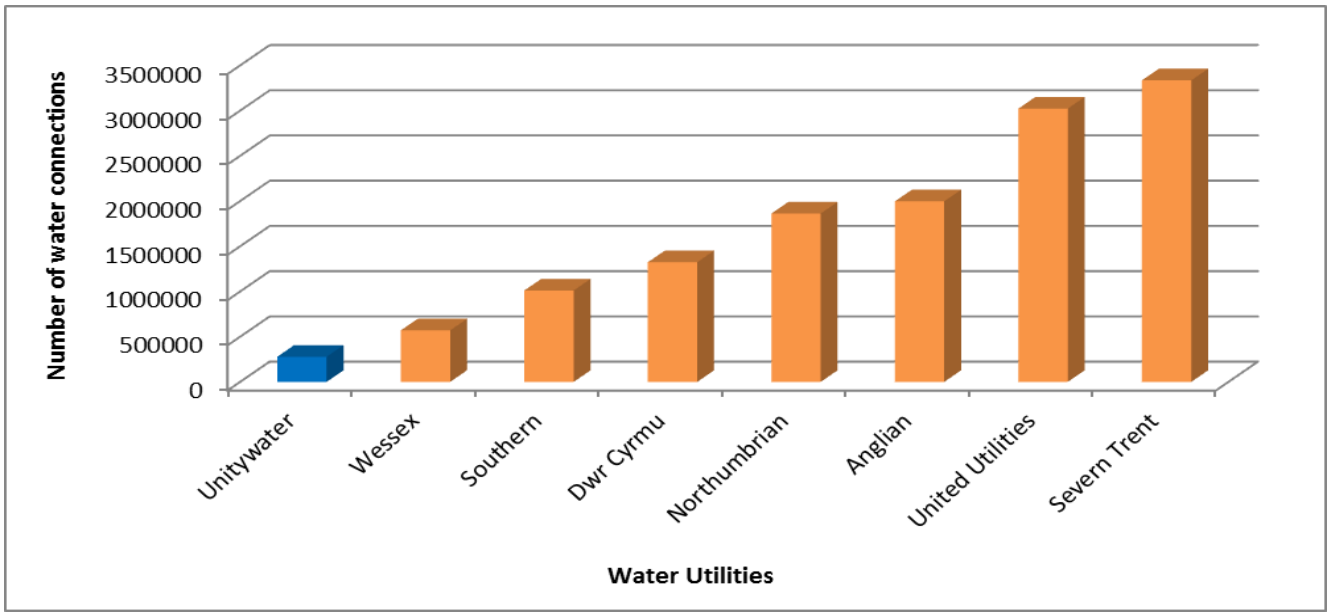
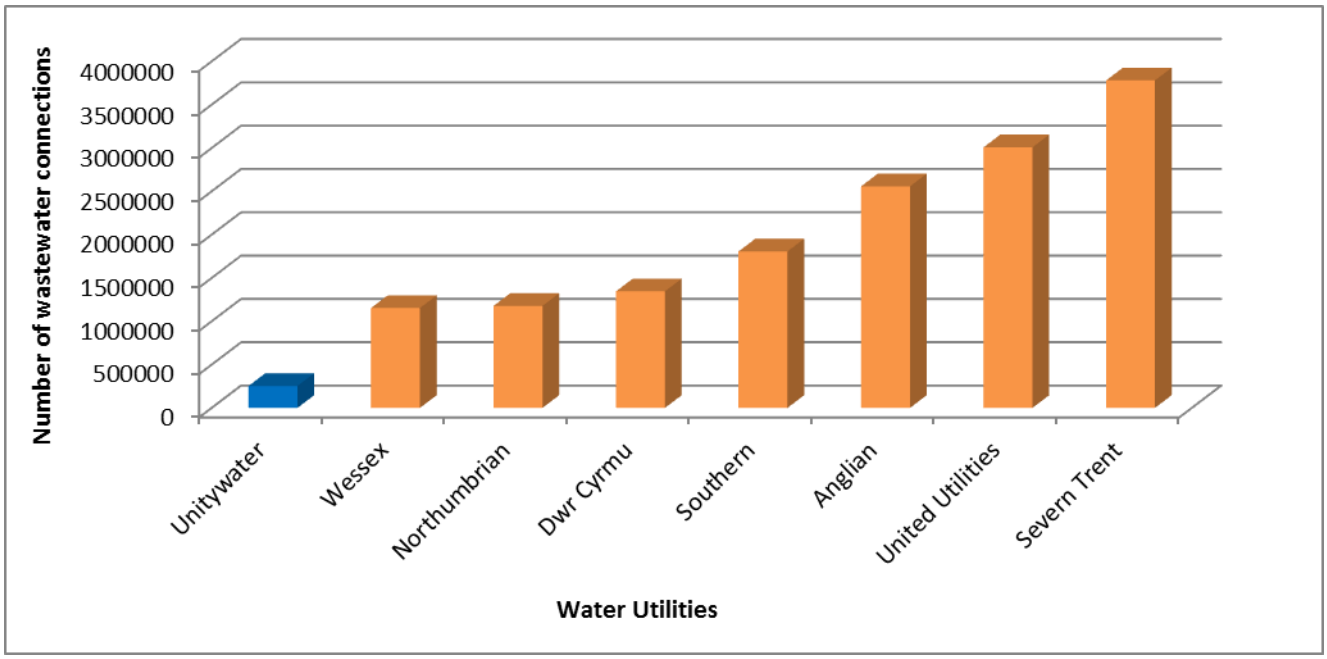


Figure 4-9 : Number of wastewater connections per utility



4.4.2 Australian benchmarking

A high level comparison of operating expenditure for Unitywater against other Australian water utilities is shown below. SKM has used data from the National Water Commission's National Performance Report 2011-12 to calculate suitable benchmarks. The data presented below for water operating expenditure includes bulk water costs. A cost escalation index was applied to the National Water Commission data to adjust costs to 2013-14 dollars. The CPI obtained from the Australian Bureau of Statistics website of 2.4% for 2012-13 was applied along with an assumed CPI for 2013-14 of 2.4%. For comparison SKM have included benchmarks for Queensland Urban Utilities, ACTEW, Barwon Water, Hunter Water Corporation, South Australia (Adelaide), and Water Corporation (including urban and regional service areas[25]) shown in Table 13 below.

Table 13 : Unitywater aggregate cost metrics for Australian Comparison

Metric	Description	Unitywater ($)	Queensland Urban Utilities ($)	ACTEW ($)	Barwon Water ($)	Hunter Water Corporation ($)	Water Corporation ($)	South Australia Water – Adelaide ($)
Customers	Total OPEX per connection	1,130	1041	412	349	268	284	245
	Water OPEX per connection	737	767	406	353	236	316	307
	Wastewater OPEX per connection	373	268	417	345	302	249	180
Network size	Total OPEX per km of pipeline	48,413	31,700	19,896	15,215	12,393	15,841	15,576
	Water OPEX per km of pipeline	34,687	46,735	19,668	13,290	11,013	16,977	18,015
	Wastewater OPEX per km of pipeline	17,575	16,345	20,124	18,227	13,813	14,477	12,508
Volume	Total OPEX per ML of sourced water	9,278	4,127	2,724	2,836	1,852	1,540	1,835
	Water OPEX per ML of soured water	6,099	3,164	1,348	1,511	834	900	1,182
	Wastewater OPEX per ML of sourced water	3,090	1,107	1,377	1,324	1,017	639	652

(Source: Unitywater 2013/15 Information Template, Queensland Urban Utilities 2013/15 Information Template, NWC National Performance Report 2011/12 (CPI applied))

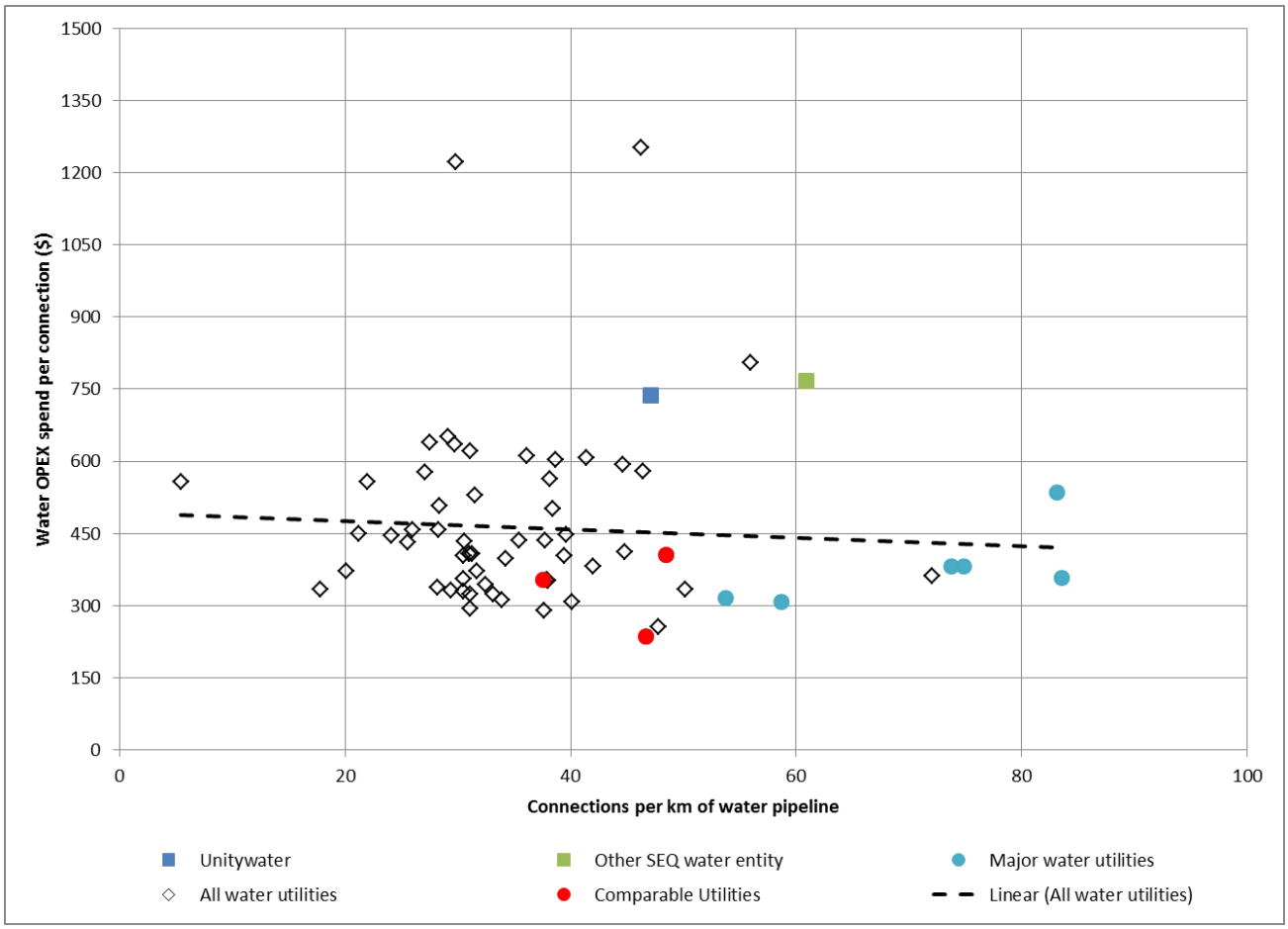
Table 13 shows that Unitywater's operating expenditure for water services is higher than comparable water distributors/retailers in Australia but is consistent with Queensland Urban Utilities. The wastewater operating expenditure is similar to Australian utilities shown in the table.

When assessing the aggregate operating costs of water utilities around Australia, comparing expenditure per connection will tend to favour the larger utilities that have a large customer base or some density. Likewise, comparing expenditure with respect to network size will favour utilities with larger networks. In order to show the relative performance of Unitywater's operating expenditure with its peers a two dimensional normalisation was used to develop a cost curve for water and wastewater services.

In Figure 4-10 below, the water operating expenditure for a range of Australian water utilities was compared using data sourced from the National Water Commission National Performance Report 2010-11. Major water entities (ie those defined in the National Water Commission's data as having greater than 100,000 customers) which have been considered to be industry peers of Unitywater are shown on the graph as blue circles. The red circle highlights the comparable water utilities to Unitywater; that is Barwon Water, Hunter Water Corporation and ACTEW. A cost escalation index was applied to the National Water Commission data to adjust costs to 2013-14 dollars. The CPI obtained from the Australian Bureau of Statistics website of 2.4% for 2012-13 was applied along with an assumed CPI for 2013-14 of 2.4%.

[25] Urban and regional service areas of Water Corporation include Albany, Kalgoorlie-Boulder, Mandurah, Perth, Geraldton, Australind/Eaton and Bunbury.

Figure 4-10 : Comparison of Unitywater's operating expenditure on water services with other Australian water utilities



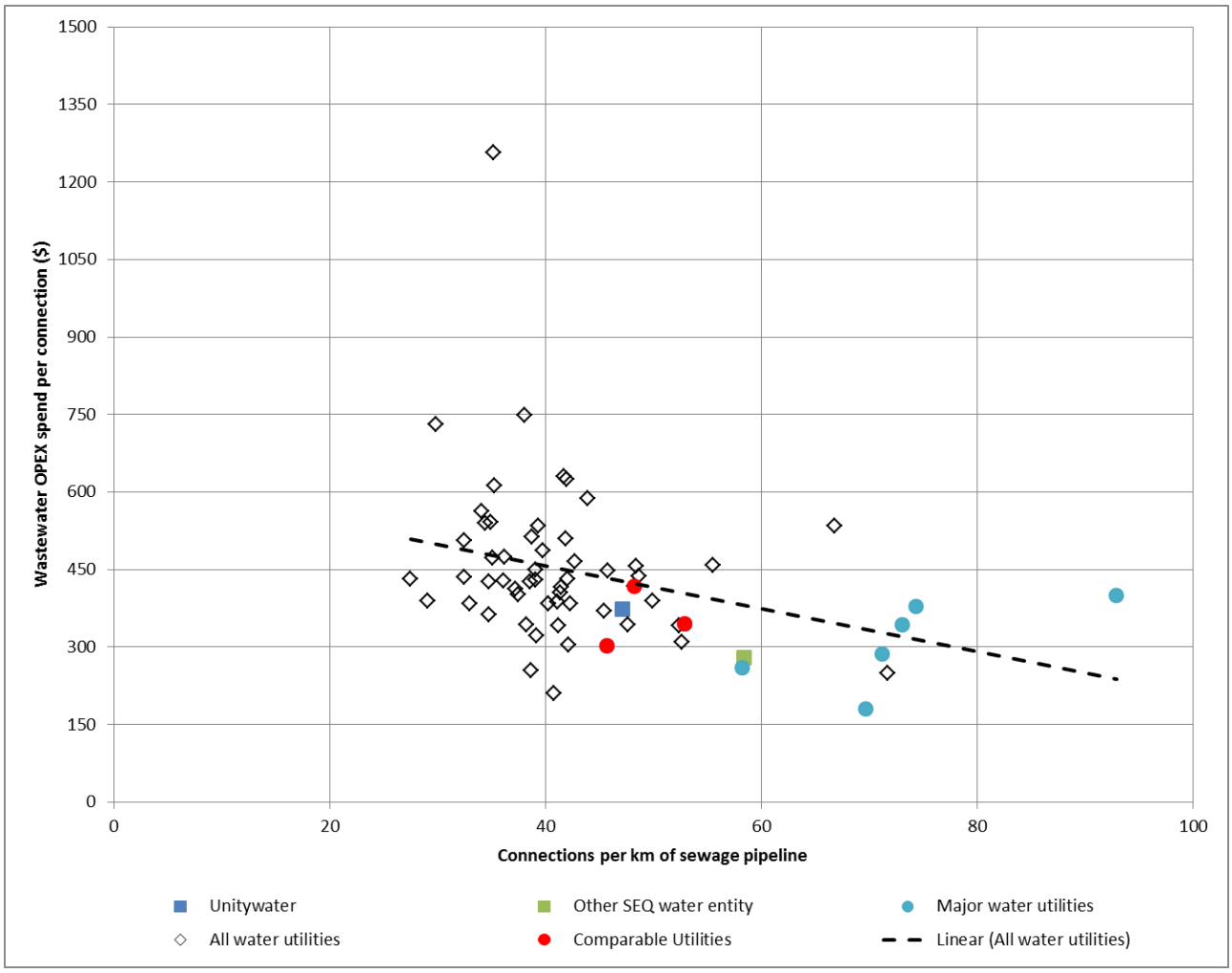
Source: Data template Unitywater 2013/15 Information Template, Queensland Urban Utilities 2013/15 Information Template, NWC National Performance Report 2011/12 (CPI adjusted – assumed 2013/14 CPI to equate to 2012/13 CPI)

Figure 4-10 shows that SKM's nominated comparable utilities to Unitywater have similar connections densities and lower water operating expenditure. Additionally the chart demonstrates that Unitywater's water operating costs are comparable with the other SEQ Water utility. SKM notes that Unitywater's increased operating expenditure is affected by bulk water costs however there is insufficient information publicly available for full benchmarking of water operating expenditure excluding bulk water costs.

Unitywater's wastewater operating expenditure is benchmarked in Figure 4-11. Similar to the operating expenditure for water, the National Water Commission National Performance Report 2011-12 has been used as a data source for peer organisations; with a cost escalation applied to adjust costs to 2013-14 dollars. The cost escalation used is the CPI for 2012-13 of 2.4% and an assumed CPI for 2013-14 of 2.4%. The major Australian utilities are shown as blue dots and the red dots highlight the comparable utilities.

The graph shows that Unitywater's wastewater operating expenditure is similar to the comparable water utilities with similar connection density. As Unitywater's wastewater operating costs are below the trendline, this suggests that Unitywater's costs for wastewater services are efficient in comparison to peers throughout Australia.

Figure 4-11 : Comparison of Unitywater's operating expenditure on wastewater services with other Australian water utilities



Source: Data template Unitywater 2013/15 Information Template, Queensland Urban Utilities 2013/15 Information Template, NWC National Performance Report 2011/12 (CPI adjusted – assumed 2013/14 CPI to equate to 2012/13 CPI)

SKM concludes that Unitywater's water operating expenditure is generally higher than similar sized Australian water service providers, which is likely due to bulk water costs. SKM also notes that Unitywater's wastewater operating costs are similar to the comparable utilities.

4.4.3 Benchmarking against Great Britain utilities

International benchmarking has been completed to compare Unitywater with the performance of water utilities operating overseas. A yearly cost escalation index and purchasing power parity conversion rate was applied to the Scottish Water International Benchmarking data to adjust costs from 2010-11 to 2013-14 Australian dollars. The CPI adopted for each year was 3%, and the average 2011 purchasing power parity of 0.454627 was used to convert Great British Pounds to Australian Dollars (instead of the average exchange rate of 0.62190)[26]. The Australian water utilities data displayed in Figure 4-10 and Figure 4-11 is shown again with the international water utilities data to show an overall comparison to Australian trends. SKM has inferred that bulk water costs are included in the total water operating expenditure for the Great Britain water utilities, shown below in the table and graphs. SKM is not able to comment on the percentage that bulk water costs contribute to the total water operating expenditure based on the available data.

[26] Pricing power parity 2011 average accessed via: http://stats.oecd.org/Index.aspx?datasetcode=SNA_TABLE4#

The following benchmarking will include operating expenditure for all utilities shown on the graphs above to illustrate trends in Great Britain, however the main analysis will focus on Wessex, the most comparable utility in terms of number of connections.

Table 14 below shows a comparison of the operating expenditure for water services of Australian and Great Britain water utilities for the 2013-14 financial year. SKM notes that the Great Britain water utilities shown below generally have lower operating expenditure for water operating expenditure and similar operating expenditure for wastewater services compared to Unitywater. Although there are several differences between water and wastewater services in Australia and Great Britain, this table provides some indication of the industry benchmarks present in Great Britain.

Table 14 : Unitywater aggregate cost metrics for Great Britain comparison

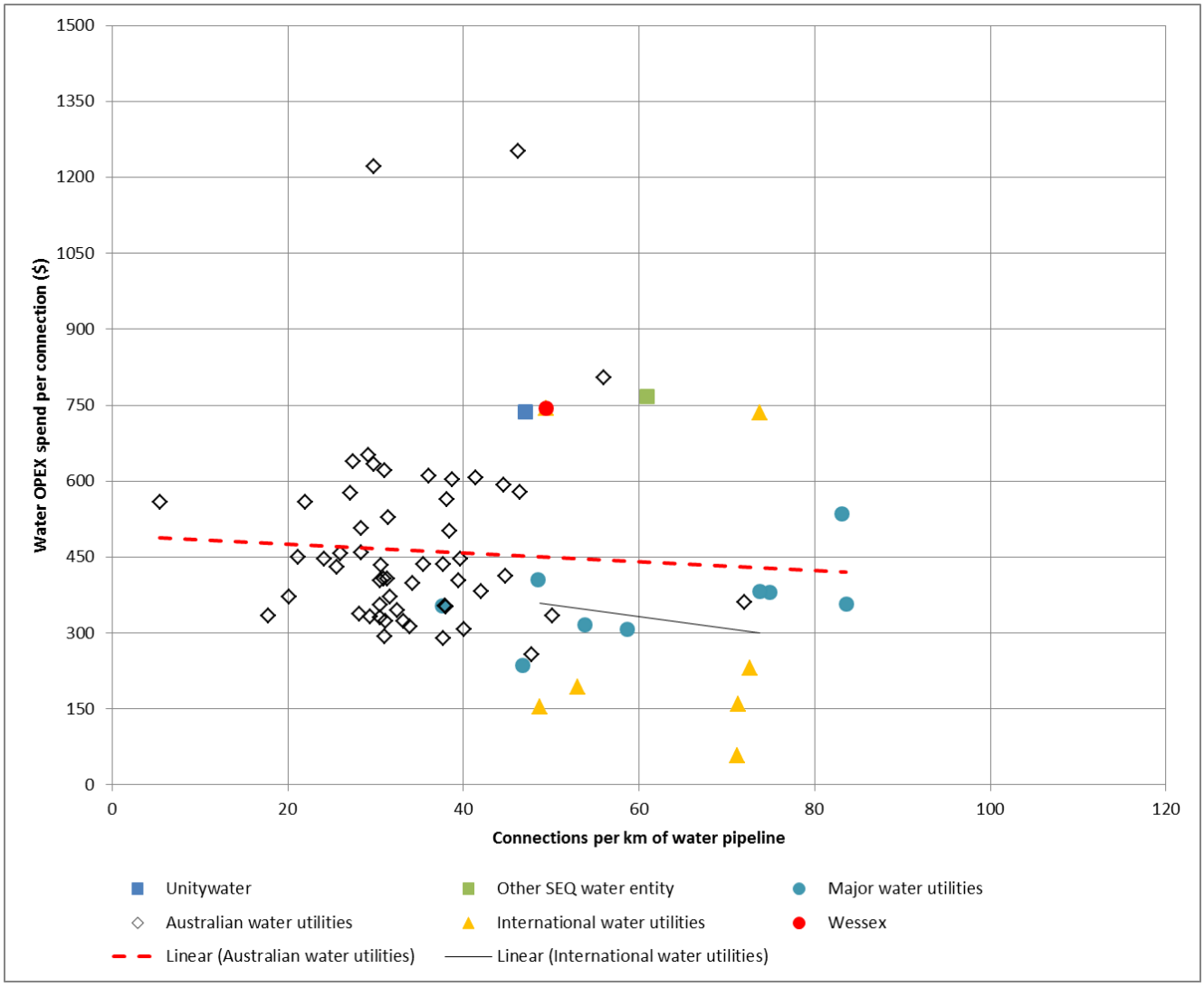
Entity	Customers		Network size	
	Water OPEX per connection	Wastewater OPEX per connection	Water OPEX per km of pipeline	Wastewater OPEX per km of pipeline
	$AUD/connection	$AUD/connection	$AUD/km	$AUD/km
Unitywater	737	373	34,687	17,575
Queensland Urban Utilities	767	268	46,735	16,345
Wessex	744	218	36,774	14,399
Southern	735	185	54,226	15,316
Dwr Cyrmu	154	426	7,507	30,947
Northumbrian	231	347	16,760	25,230
Anglian	194	234	10,293	13,549
United Utilities	59	162	4,174	11,092
Severn Trent	159	203	11,364	14,002

Source: QUU 2013/15 Information Template, Unitywater 2013/15 Information Template.

Figure 4-12 below displays the water services operating expenditure (2013-14) for Unitywater, other Australian water utilities and water utilities operating in Great Britain which are previously highlighted in the table above.

The green square on the graph shows that Unitywater's water operating expenditure is higher than Great Britain water utility trends. The international water utilities' trend-line is below the Australian water utilities' trend-line, and shows a greater decrease in operating expenditure as the amount of connections per km increases. The red circle represents Wessex which is comparable to Unitywater in terms of number of connections and connection density. Unitywater has very similar water operating expenditure compared to Wessex and would therefore be considered aligned with this comparable utility.

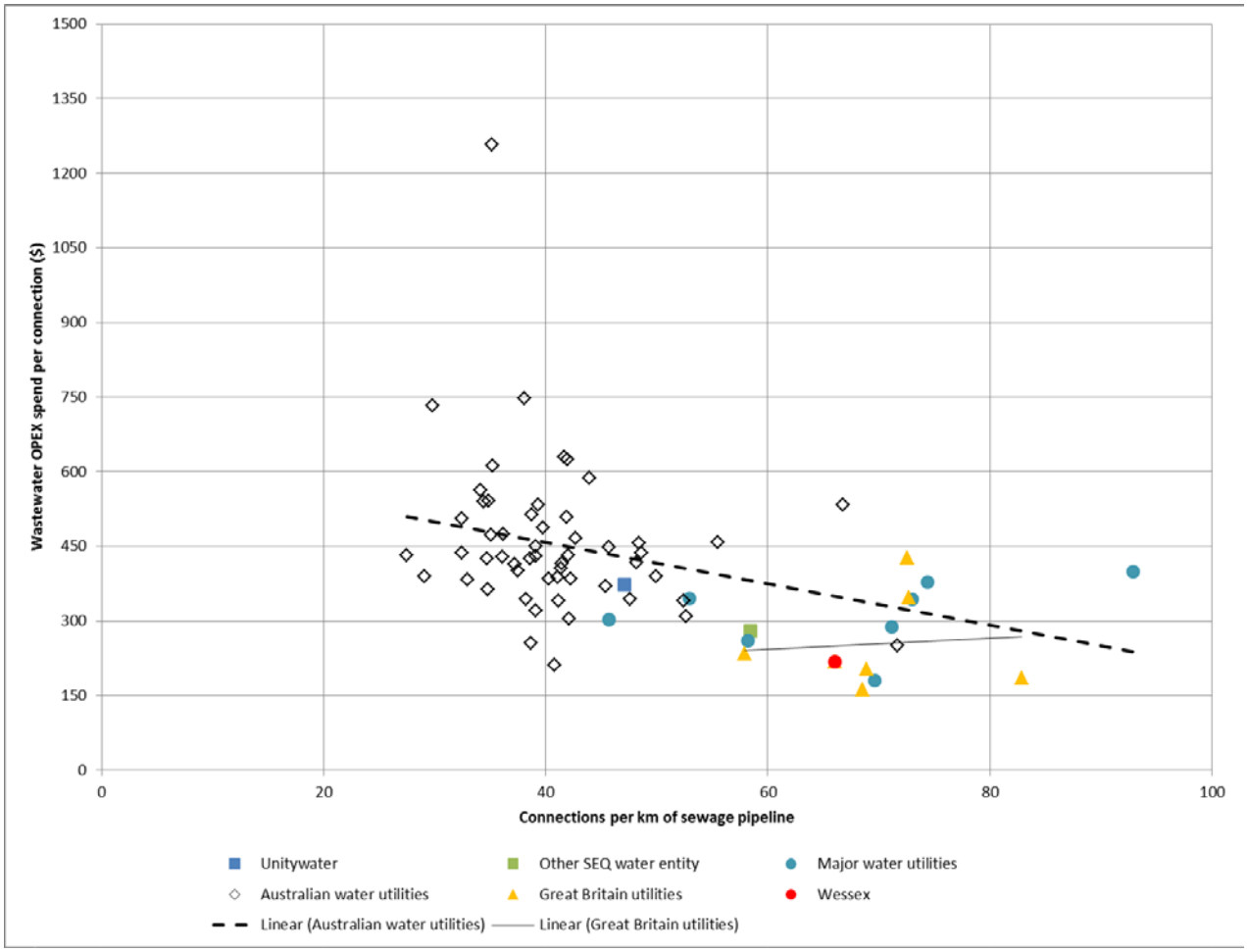
Figure 4-12 : Comparison of Unitywater's operating expenditure on water services with other Australian and Great Britain water utilities



Source: Unitywater 2013/15 Information Template, Queensland Urban Utilities 2013/15 Information Template, NWC National Performance Report 2011/12 (CPI adjusted – assumed 2013/14 CPI to equate to 2012/13 CPI), Scottish Water International Benchmarking 2010-11.xls (CPI of 3% applied).

Figure 4-13 below compares the 2013-14 operating expenditure for wastewater services forecasted by Unitywater with operating expenditure of water utilities operating in Great Britain.

Figure 4-13 : Comparison of Unitywater's operating expenditure on wastewater services with other Australian and Great Britain water utilities



Source: Unitywater 2013/15 Information Template, Queensland Urban Utilities 2013/15 Information Template, NWC National Performance Report 2011/12 (CPI adjusted – assumed 2013/14 CPI to equate to 2012/13 CPI), Scottish Water International Benchmarking 2010-11.xls (CPI of 3% applied).

The majority of water utilities operating in Great Britain have lower wastewater operating expenditure compared with Unitywater and other Australian water utilities for 2013-14. The trendline for Australian water utilities shows a greater decline in operating expenditure as connections per km increases compared with Great Britain utilities which show a slight increase as connections per km increases. Wessex is shown to have lower wastewater operating expenditure than Unitywater; however the difference in connection density will affect this.

It is evident from the benchmarking results that Unitywater's water operating expenditure is higher than many water utilities in Australia, and similar to Wessex. Unitywater's wastewater operating expenditure is higher than Wessex, which is likely due to the differences in connection density.

This is a high level benchmarking assessment with limitations of comparability with Unitywater. Figure 4-12 and Figure 4-13 show that Great Britain water and wastewater operational expenditure trends are overall more efficient than Australia. SKM notes that wastewater operating expenditure is shown to be aligned with Australian and Great Britain trends. Water operating expenditure shown in Figure 4-10 could be decreased to be more aligned with Australian utilities.

4.4.4 Unitywater's benchmarking activities

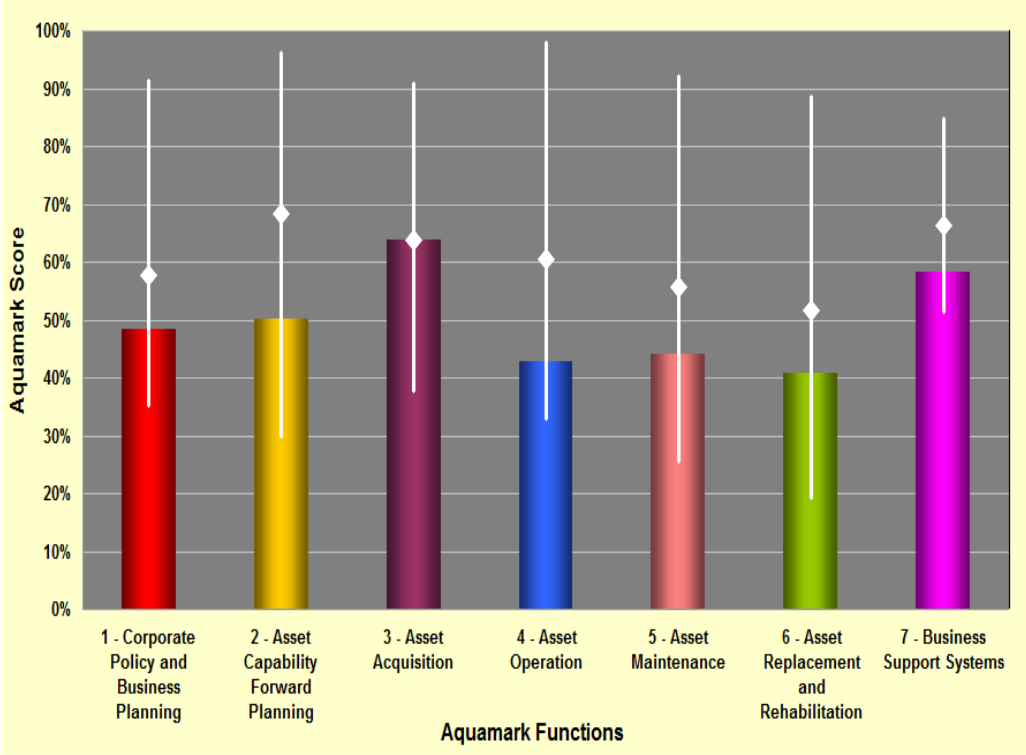
Unitywater has previously undertaken several benchmarking activities and continues this benchmarking program. This recurrent program is conducted to continuously improve Unitywater's operations and set best practice performance metrics to strive for. The benchmarking activities planned for the 2013-14 financial year will assess a corporate reputation, customer satisfaction and the ICT Service Delivery Model.

A sample of recent benchmarking studies undertaken by Unitywater is briefly outlined below.

International Asset Management Performance Improvement Project 2012

This study involved the use of Aquamark asset benchmarking framework to assess performance and identify opportunities for improvement. The results of this study are used to identify the top priority improvement initiatives and assist Unitywater in realising its vision and strategic objectives. Figure 4-14 below highlights Unitywater's performance as the coloured blocks against benchmarks from 37 Australian and international utilities.

Figure 4-14 : Aquamark Benchmark Survey Summary of Asset Management Results



Source: Unitywater Price Monitoring Review Presentation, 16 July 2013.

2012 Water Industry Civil Maintenance Benchmarking Program

This program assessed Unitywater's civil maintenance workforce by comparison of cost, task productivity and service level to a leading peer group. It focused on general OH&S, reactive maintenance and planned maintenance to identify opportunities for improvement.

ICT Benchmarking Survey

The ICT benchmarking survey was undertaken by Water Services Association Australian (WSAA) and assessed ICT hardware, software and services in terms of comparative headcount and overall dollar spend. The overall

findings from this survey were that Unitywater compares very favourably in all areas except for telco costs as shown below in Table 15.

Table 15 : ICT Benchmarking Results Summary

Metric	Unitywater	Average	Median
ICT OPEX Per Connected Property	$23	$31	$35
ICT CAPEX Per Connected Property	$6	$7	$7
ICT OPEX Per Km Potable Water Pipes	$1,115	$1,696	$1,260
ICT CAPEX Per Km Potable Water Pipes	$929	$1,703	$1,529
ICT OPEX Per Employee	$7,613	$16,094	$18,896
ICT CAPEX Per Employee	$6,345	$17,878	$15,622
Average Cost Per ICT FTE	$107,135	$110,902	$107,135
Telco Costs Per Km Potable Water Pipes	$420	$266	$204

Source: Item 3.4 Attachment 1: Completed Benchmarking Activities, Unitywater, 24 April 2013.

National Performance Report

The national performance report involves a compulsory external audit undertaken every three years to assess Australian water utilities in terms of pricing, water resources, finance, customer, asset, environment and health. The Australian benchmarking section is based on the results of the last performance report (2011-12).

Procure to pay

The Procure to Pay program was conducted to benchmark the purchasing and accounts payable functions of Unitywater against Australian, New Zealand and global organisations to improve the efficiency of these functions.

4.5 Sample selection

In undertaking a review of prudency and efficiency of operating expenditure SKM has selected a sample of costs for detailed investigation. The sample is shown in Table 15 below.

The selection of our sample is based on the categories that attract the largest portion of operating expenditure and includes both fixed and variable costs. SKM has, however, excluded bulk water costs from our sample. Bulk water costs are determined by other agencies and are not within the control of Unitywater. Our sample includes 89.3% and 88.8% of the total forecast operating expenditure (less bulk water and non-regulated services) for 2013-14 and 2014-15 respectively.

Table 16 : Operating expenditure sample selection for Unitywater

Category	Service	Operating Expenditure ($'000)	
		2013-14	2014-15
Corporate costs	Drinking water	27,573.4	25,385.2
	Other core water services	0.0	0.0
	Wastewater via sewer	24,352.3	22,419.7
	Trade waste	352.7	324.7
	Total	**52,278.4**	**48,129.6**
Employee costs	Drinking water	14734.0	15198.3

Category	Service	Operating Expenditure ($'000)	
	Other core water services	1334.9	1378.5
	Wastewater via sewer	38420.4	39655.5
	Trade waste	1623.2	1674.5
	Total	**56112.5**	**57906.8**
Electricity costs	Drinking water	1,511.3	1,607.4
	Other core water services	184.5	196.2
	Wastewater via sewer	8,170.3	8,689.7
	Trade waste	0.0	0.0
	Total	**9,866.1**	**10,493.3**
Other Materials & Services	Drinking water	2905.3	3002.0
	Other core water services	102.1	105.5
	Wastewater via sewer	8014.6	8281.5
	Trade waste	51.4	53.1
	Total	11073.4	11442.2
Total Sample		**129,330.2**	**127,971.9**
Total operating expenditure, less bulk water and non-regulated services		**144,793.3**	**144,110.6**
Percentage		**89.3%**	**88.8%**

Source: 2013/15 Information Template

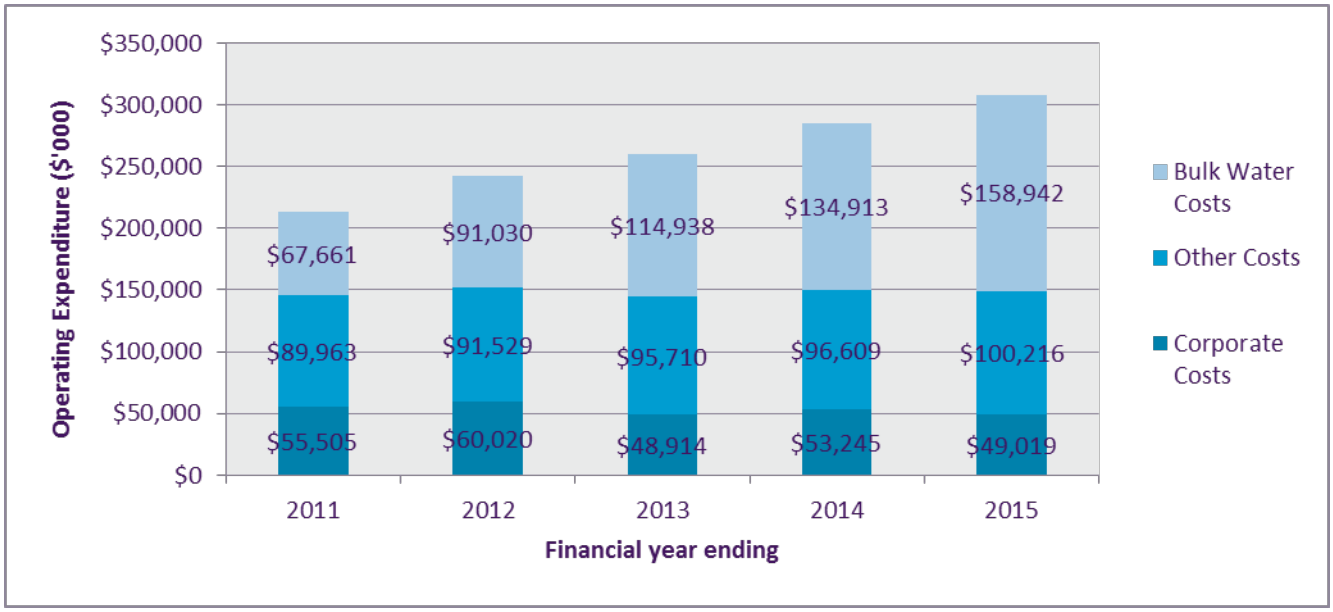
4.6 Corporate costs

This section analyses Unitywater's corporate costs in total, by function, for year-to-year budget changes, and by employee and non-employee costs (Sections 4.6.3 and 4.6.4). It then uses this analysis, with available benchmarks, to assess the prudency and efficiency of corporate costs, and to identify efficiency savings (Sections 4.6.6 and 4.6.7).

4.6.1 Costs in total

Corporate costs comprised 18.8% of Unitywater's operating costs in 2012-13, and represent 33.8% of its operating costs once bulk water costs are excluded. The budgeted/forecast annual changes in corporate costs, bulk water costs, and other operating costs are shown in Figure 4-15.

Figure 4-15: Corporate Costs and Total Operating Costs (nominal $'000)



In terms of the proportions of corporate costs to total operating costs, the year-to-year changes are shown in Table 17.

Table 17 : Changes in corporate costs

	2012-13	2013-14	2014-15
Percentage of Total Operating Costs	18.8%	18.7%	15.9%
Percentage of Total Operating Costs less Bulk Water Costs	33.8%	35.5%	32.8%

This table shows that while the proportion of corporate costs is expected to decline, once the significant increases in bulk water costs are excluded they are expected to increase from 2012-13 to 2013-14, before declining in 2014-15.

Definition and comparability

Corporate costs are defined by Unitywater to include the cost of the following functions:

- Office of the CEO
- Finance & Regulatory Service
- ICT
- Retail Services
- People, Culture & Safety
- Corporate Services
- Business Improvements
- Corporate Finance.

It has advised that this scope aligns with the Authority's definition of corporate costs.

A time series of the annual changes in corporate costs is shown in Table 18.

Table 18 : Corporate Costs in Aggregate (nominal $'000)

	2010-11 Actual ($'000)	2011-12 Actual ($'000)	2012-13 Est. Actual ($'000)	2013-14 Budget ($'000)	2014-15 Forecast ($'000)
Corporate costs	55,505	60,020	48,914	53,245	49,019
less Non-regulated services corporate costs	1,203	1,790	570	966	890
Regulated Corporate Costs	**54,302**	**58,229**	**48,344**	**52,278**	**48,130**
Increase over previous year	-	7.2%	-17.0%	8.1%	-7.9%

Allocation to non-regulated costs

In the entity's data template provided to the Queensland Competition Authority, corporate costs comprise separate totals for each of the regulated services – water and wastewater - and for non-regulated services. The corporate costs allocated to the two regulated services agree with the amounts shown in the Information Return to the Authority (Table 8, p.32).

The excluded costs of non-regulated services comprise a small proportion of Unitywater's services, as shown in Table 19.

Table 19: Cost allocations to unregulated services

	2010-11 Actual	2011-12 Actual	2012-13 Est. Actual	2013-14 Budget	2014-15 Projection
% total costs allocated to unregulated services	1.7%	2.2%	2.1%	1.8%	1.7%
% corporate costs allocated to unregulated services	2.2%	3.0%	1.2%	1.8%	1.8%

Table 19 shows that while the proportions of corporate and total costs allocated to unregulated services have differed, the variances have declined over time and are now not significant. As a consequence, there is no significant over-allocation or under-allocation of corporate costs to regulated services. Therefore, the current allocations are appropriate.

4.6.2 Cost of each function

For each corporate function, the costs in the base year (2012-13) and the budgeted/forecast costs in 2013-14 and 2014-15 respectively are shown in Table 20.

Table 20: Cost of each Corporate Function (nominal $)

	Costs		
	2012-13 Estimate ($ M)	**2013-14 Budget ($ M)**	**2014-15 Forecast ($ M)**
Office of CEO	1.6	0.7	0.8
Finance & Regulatory Services	6.5	7.6	8.0
ICT #	6.6	6.8	8.0
Retail Services	16.1	17.1	18.2
People, Culture & Safety	5.8	6.4	6.3
Corporate Services #	15.6	15.8	16.5
Business Improvements	2.6	4.8	2.9
Total ex Corporate Finance	48.8	52.7	51.6

	Costs		
	2012-13 Estimate ($ M)	**2013-14 Budget ($ M)**	**2014-15 Forecast ($ M)**
Corporate Finance *	0.1	0.5	-2.6
Total	**48.9**	**53.2**	**49.0**

* Corporate Finance costs include stamp duty, land tax, fringe benefits tax and bad debts.

Net of overhead capitalisation.

Unitywater has attributed the increase from 2012-13 to 2013-14, of $4.3 million or 8.8%, to:

- A 4.05% increase in remuneration costs per employee
- An 2.5% increase in non-contracted non-labour costs
- Price escalation on non-labour costs as per individual contracts
- Significant changes in business-as-usual costs and temporary items as set out in Table 21.

It attributes the decrease from 2013-14 to 2014-15, of $4.2 million or 7.9%, to:

- A 4.25% increase in remuneration costs per employee
- An 2.5% increase in non-labour costs
- Significant changes in business-as-usual costs and temporary items as also set out in Table 21.

The permanent and temporary budget changes to the budget for corporate functions are set out in Table 21.

Table 21: Budget Changes (nominal $)

Projects/programs	Responsibility/Cost Centre *	2013-14 Budget $M	2014-15 Estimate $M
Permanent (Business-as-usual) Changes			
FTE reduction	Corporate Services	-0.8	-0.3
Property Rationalisation	Corporate Services	-0.2	-0.3
Legal Costs	Corporate Services	-0.1	-0.3
Terminated fleet leases – owned vs. leased	Corporate Services	-0.6	
Internal audit fees	Corporate Services	-0.1	
Consultants	Corporate Services	-0.2	
Scope change – business improvement initiatives	Corporate Services	0.1	
ICT Efficiencies	ICT	-2.3	
Enterprise Program Management Office	ICT	0.3	
Corporate systems integration & release mgmt	ICT	0.3	
Mobile device management solution	ICT	0.3	
Telecoms costs	ICT	0.4	
New software & technical support (GPS, Unify, Maximo/Kern, Scada, Intelex, GIS)	ICT	0.9	
Growth in ICT service requirements	ICT		0.4
Growth in customer numbers	Retail	0.3	0.3
Capex to Opex staff transfer	Retail	0.4	
FTE reduction – post Unify	People, Culture & Safety	-0.2	-0.2

Projects/programs	Responsibility/Cost Centre *	2013-14 Budget $M	2014-15 Estimate $M
Collection cost reduction	Retail	-0.1	
Other savings incl. vacancy factor	Retail	-0.3	
Improved meter reading accuracy bonus	Retail	0.1	
Scope changes (sundry/trade waste billing, welcome packs & reminder/overdue notices)	Retail	0.2	
Efficiencies	Corporate services	0.8	
Business Improvement initiatives	Corporate services	0.9	
Temporary Changes			
Property fit-out & relocation	Corporate Services	1.4	-0.5
EBA negotiations	People, Culture & Safety	0.2	-0.1
OHS initiatives	Corporate Services	0.4	
Business development FTE & on-costs	Corporate Services	0.4	
Overhead capitalisation	Corporate Finance		-3.0
Total		**2.5**	**-4.0**

* Corporate services comprises Finance & Regulatory Services, People, Culture & Safety, Office of the CEO and Business Improvements

4.6.3 Employee costs

The largest cost item in the 2012-13 corporate budget was for employee costs, which accounted for 59% of corporate costs that year. The budgeted/forecast costs for corporate employees are given in Table 22, together with a comparison of employee numbers for each corporate function.

Table 22: Corporate FTEs and Costs

	FTEs *		
	2012-13 Actual	2013-14 Budget	2014-15 Estimate
Office of the CEO	12.6	12.6	Not yet estimated
Finance & Regulatory	54.0	54.0	
ICT	49.9	49.9	
Retail Services	78.1	78.1	
People, Culture & Safety	78.5	74.5	
Total Corporate	**273.1**	**269.1**	**269.1**
Other	645.1	642.1	642.1
Total Organisation	**918.2**	**911.2**	**911.2**
Employee Costs * (nominal $'000)			
Total Corporate	34,125	33,344	34,464
Cost per Corporate Employee	$124,954	$123,909	$128,071
Change from Previous		-0.8%	3.4%

* Unitywater does not forecast capital labour costs, and external capital labour is excluded.

The budgeted/estimated cost of corporate employees was based on a reduction of 4 FTEs (1.5%) in 2013-14, and no change in FTEs in 2014-15.

The escalations for employee costs were:

- 4.05% for 2013-14 – reflecting the increase for the final year under the current Certified Agreement, together with a pass-on of the 2013-14 increase in superannuation guarantee, of 0.25%.
- 4.25% in 2014-15 – which provides for the anticipated "buy-out" of unproductive work practices and conditions.

4.6.4 Non-employee costs

For the remaining (non-employee) categories of corporate costs, a time series comparison is given in Table 23.

Table 23: Non-labour Corporate Costs (nominal $'000), by Function

	Contractor costs			Licence & Regulatory costs			Other Materials & Services		
	2012-13 Est. Actual $'000	2013-14 Budget $'000	2014-15 Forecast $'000	2012-13 Est. Actual $'000	2013-14 Budget $'000	2014-15 Forecast $'000	2012-13 Est. Actual $'000	2013-14 Budget $'000	2014-15 Forecast $'000
Office of CEO	0.1	0	0	0	0	0	0.1	0	0
Business Improvements	0	2.0	2.0	0	0	0	0	0	0
Corporate Service	0.7	0.6	0.6	0	0.1	0.1	12.3	13.0	13.5
Finance & Regulatory Service	0.3	0.4	0.5	0.7	0.7	0.7	0.3	0.7	0.8
ICT	4.2	3.8	4.0	0	0	0	5.9	6.1	6.3
Retail Services	5.2	5.5	5.6	0.1	0.1	0.2	3.0	3.4	3.5
People, Culture & Safety	0.3	0.3	0.3	0	0	0	0.6	0.6	0.6
Total	**10.8**	**12.6**	**13.0**	**0.8**	**0.9**	**1.0**	**22.2**	**23.8**	**24.6**

The recurrent costs in each of the three categories have been escalated by 2.5% for each year, based on the assumption that non-labour costs would escalate by CPI inflation. The CPI estimate of 2.5% aligns with the November 2012 forecast by the Reserve Bank of Australia used by the entity. (It is noted that the Reserve Bank of Australia has since continued to forecast CPI inflation over the short-term at this mid-point of its 2~3% target range for monetary policy - and that both the Commonwealth and Queensland budgets for 2013-14 have adopted the 2.5% assumption for CPI inflation over the medium-term.)

SKM considered the use of CPI as the index for non-labour costs to be reasonable and in line with general industry practice, and the proposed escalation factor of 2.5% to be reasonable and consistent with the forecast movement in similar costs in the Australian market to 2014-15.

4.6.5 Prudency and efficiency

To assess whether Unitywater's budgeted and estimated corporate costs for 2013-14 and 2014-15 are at a level which is prudent and efficient, they were compared with:

- The entity's previous cost levels - having regard for scope changes and cost-saving projects;
- The range of corporate costs ratios incurred by other utilities - having regard for jurisdictional and other factors which would affect the validity of those comparisons;
- A bottom-up review of corporate functions and costs, compared with those of similar organisations, to the extent that relevant and reliable information was available.

In doing this analysis, SKM was aware of, and made allowances for, the limitations of benchmarking. These limitations include:

- Differences in organisational structures and in the definition of corporate costs between Australian utilities. SKM noted the concern expressed in Unitywater's submission (p.44) that *"… benchmarking amongst distributor-retailers in SEQ or other regions is problematic and prone to appropriate comparator error."* While Unitywater considered that Hunter Water would be the closest fit as a comparator business (although it has been established longer), it had not assessed whether Hunter Water's corporate functions would be a valid comparator
- The relative size and maturity of the organisations
- The effects of inflation when comparing costs in absolute terms

SKM has also noted the results of the Authority's 2012-13 review in which it accepted the recommendation that Unitywater's regulated corporate costs for 2012-13 be reduced to $29.7 M

4.6.6 Top-down benchmarks

For the SEQ retail distribution entities, the ratio of corporate costs to total operating costs after bulk water costs are excluded provides a more useful 'top down' indicator, where it can be determined, of whether their corporate costs are efficient when compared with those of other water utilities having a significantly lower proportion of bulk water costs.

A comparison of the entity's corporate costs as a proportion of operating costs with other urban water utilities in Australia is as follows:

Table 24: Corporate Cost Comparison

Utility	Size (Opex $ M)	Corporate Costs/ Operating Costs	Comment
Sydney Water	$901 M	19.8%	• Excludes bulk water costs • 2011-12 actuals • IPART review found scope for significant efficiency gains
Queensland Urban Utilities	$464 M	19.8%	• Excludes bulk water costs • 2012-13 estimated actuals • Corporate functions said to align with QCA definition
Allconnex Water	$380 M	14.3%	• Excludes bulk water costs • 2011-12 budget • In transition from Council SLAs
Unitywater	$243 M	33.8%	• Excludes bulk water costs • 2013-14 forecast • Corporate functions are said to align with QCA definition, and therefore largely similar to those of Queensland Urban utilities.
Hunter Water	$122 M	28.8%	• Includes the customer service function. • IPART's review sought continuing efficiency of 0.25% each year, including from upgrading business systems

(Comparisons are not available for the three Melbourne utilities as the ESC review has not gone to this level.)

Reviews by IPART's consultants generally found there was scope for cost savings, including at Hunter Water where the Operating Costs per Connection are significantly lower than at Unitywater. Despite this, Hunter Water's proportion of corporate costs is significantly higher than most other water utilities. This seems to indicate that Hunter Water has a wider definition of corporate costs, in which case it would not provide a useful benchmark.

At the same time, the very large difference in the ratios of corporate costs to operating costs between Unitywater and Queensland Urban Utilities would, on the face of it, indicate an excess of corporate costs in the former of 14% (which is equivalent to potential annual savings of $6.8 million.) This gap would increase as Queensland Urban utilities moves towards its own cost-reduction targets.

The current difference of 14% compares with Unitywater's across-the-board savings target of 5% in 2013-14, as a step towards reaching its Cost to Serve reduction target of 10.8% by 2017-18. If it achieves the 5% savings in corporate costs in 2013-14, the elimination of the current gap between it and Queensland Urban Utilities would require annual savings of 2.25%. If instead, Unitywater's corporate costs increase by the 8.1% budgeted for in 2013-14, annual savings of over 5% are required thereafter.

4.6.7 Cost escalations

Employee costs

From Table 22, the average cost of a corporate employee has been forecast to decrease from $124,954 in 2012-13 to $123,909 (0.8%) in 2013-14. From our experience with other organisations in south-east Queensland, $124,954 is considered to be a very high average cost for corporate employees in a utility. For example, it is 50% higher than the average cost of a corporate employee at Queensland Urban Utilities.

Identifying the reasons for this large difference would require a comparative cost audit of each entity. It is noted, however, that:

1) Differences in how labour costs are accounted for appears not to be a significant factor, as there is little difference between the average cost per employee at Unitywater ($63,753) and at Queensland Urban Utilities ($64,417). (This latter figure includes payroll tax, superannuation and other labour on-costs);
2) A comparison of the remuneration of the key management personnel from data in the most recent annual reports (for 2011-12) indicates that Unitywater's senior executive packages were below those of Queensland Urban Utilities.

In the absence of such a review, we have not proposed an adjustment for the apparently very high average labour costs in Unitywater's corporate functions.

Regardless of whether the current average salary in the corporate functions is excessive, the 2014-15 escalation of 4.25% provided for, is higher than that in Queensland Urban Utilities (3%), and in the Queensland public service where recent agreements have provided for increases of 2.2%,

Applying a 2.2% escalation, instead of 4.25%, to Unitywater's corporate labour costs provides a cost reduction of $706,000 from the current 2014-15 forecast of $34.464 million.

Non-employee costs

Table 23 shows the average cost of Other Materials and Services per corporate employee in 2012-13 to be only $81.29. This figure is very low, indicating that Unitywater may account for these costs differently to Queensland Urban Utilities and other entities.

4.6.8 Bottom-up review

Employee costs

Unitywater's 2013-14 budget provides for 269.1 corporate employees, which is 29.5% of the total FTEs of 911.2. The equivalent ratio in Queensland Urban Utilities is 18.8%. The difference of 10.7% equates to 28.8 FTEs.

People, culture and safety

As staff numbers are the main driver of the size of this function, it is best compared using the ratio of staff to the total staff in the entity. For Unitywater, the ratio is 8.2% - that is, 74.5 People, Culture and Safety staff for 911.2 total staff.

The Authority's review of SunWater by Deloitte in 2011 drew on a database of 74 utilities in the USA and found that SunWater's ratio of 2% (that is, 10 HR staff for 497 employees) was inefficient by a factor of 1 FTE, while indicating that SunWater also had the equivalent of 10 FTEs as contractors. SKM also notes that SunWater also had a Safety FTE outside its HR function. Adjusting for these differences gives a local benchmark of 4.02%, (20 staff per 497 total staff) and a US benchmark of 1.8% (albeit for larger utilities). As Unitywater is significantly larger than SunWater, it should have some economies of scale in this function. The ratio for Queensland Urban Utilities is 4.5%.

By applying the local benchmark of 4.02% to the expected overall staffing of 911.2 in 2013-14 equates to this function requiring 36.6 staff. Accordingly, SKM concludes that there is a potential efficiency saving of 37.9 FTEs in the People, Culture and Safety function. At the average cost per corporate employee of $123,909, this equates to a saving of $4.696 million.

Senior management

In terms of senior management remuneration, as disclosed in the 2011-12 annual report, SKM has concluded that it was less than that of Queensland Urban Utilities and Allconnex Water, and within the ranges paid in other large utilities in South-east Queensland.

Regarding the size of the senior management team, Unitywater has seven key management personnel compared with, for example, the 10 at Sydney Water, which IPART's consultants found to be excessive, and with nine at Queensland Urban Utilities. Hence, the number of senior managers at Unitywater is considered reasonable.

Finance and regulatory

With 54 FTEs, this function has 20.1% of the budgeted FTEs for corporate and 22.3% of the establishment labour budget for corporate functions. These are similar proportions to those in Queensland Urban Utilities; although that entity's Finance function is also responsible for the Risk sub-function (as well as Procurement which is common to both).

Unitywater's off-budget target of achieving 5% savings from its 2012-13 actual support costs in 2013-14, as a step in its Cost to Serve reduction of 10.8% by 2017-18, is likely to involve staff reductions in this and other corporate functions, through the economies available from amalgamation, and through business improvement initiatives and the greater use of information technology.

Applying the 5% saving to the Finance and Regulatory function involves a reduction of 2.7 FTEs from 2013-14. To work towards meeting the Cost to Serve goal at least, further annual savings of 1.5% on average would be required in 2014-15 and the following years.

Non-employee costs

The major costs in this account would normally be the variable or semi-variable employee overheads, including the cost of rent, building services, IT hardware and software, supplies and stationery. As these costs per employee are very low, they have not been analysed.

Licence and regulatory costs

These costs are minor and are largely not controllable.

4.6.9 Conclusion

In summary, SKM finds that there is scope for Unitywater to achieve additional savings as shown in Table 4-21.

Table 25 : Adjustments to Budget/Estimates (nominal $)

	2013-14	2014-15
Reduction of 37.9 FTEs in People, Culture & Safety	$4,696,000	$4,854,000
Reduction of 2.7 FTEs in Finance & Regulatory	$335,000	$346,000
Adjusted labour cost escalation – section 4.7.7	$0	$706,000
less Labour cost escalation for 40.6 fewer FTEs		-$103,000
Total Adjustments	$5,031,000	$5,803,000

SEQ Price Monitoring Information Requirements for 2013-15:

Corporate costs means general corporate expenditure that cannot be reasonably allocated to other cost types, including such costs associated with:

a) personnel in the corporate group/division
b) general management
c) board members
d) legal counsel
e) company secretary
f) procurement
g) insurance
h) quality/business improvement
i) corporate relations
j) strategy and planning
k) human resource management
l) risk management
m) environment management
n) property management
o) financial management
p) support staff for the corporate office
q) costs incurred by the corporate office
r) membership fees for industry or trade organisations
s) IT costs other than costs associated with SCADA
t) price monitoring staff, providing information requested by the Authority, preparing submissions in response to consultations conducted by the Authority, non-financial audits and the preparation of price monitoring accounts

Costs associated with the following items must be excluded, and separately identified, from corporate costs:

a) management fees which are a transfer of profit rather than a fee for service; and
b) costs associated with property required for workshops and for network assets. (pp.20-22)

4.7 Employee expenses

4.7.1 Overview of operating expenditure

The labour cost budget for this item includes all staff Unitywater employs in the operation of their water supply, wastewater treatment assets and corporate offices.

Unitywater *"… employs staff across a broad range of skills and professions, from engineers, chemists, field staff (both trade qualified and non-trade), through computer technicians, scientists, accountants, human resource specialists, solicitors, managers and administration staff. Unitywater's workforce planning aims to attract and*

retain skilled staff, whilst at the same time continuing to build the capacity of existing staff. Unitywater faces two key challenges in terms of its people. Firstly the relatively high average age of our workforce presents a challenge of retaining the wealth of knowledge that may potentially be lost as team members retire. Secondly, Unitywater is challenged in its efforts to attract skilled tradespeople and engineers"[27]

Table 26 details the employee expenditure detailed in the Information Template and in the Information Return document for Unitywater between 2011 and 2015. The information presented in these documents show only minor and immaterial variances due to rounding-off errors, based on the assumption that the total operating expenditure outlined in the information return includes non-regulated costs.

Table 26 : 2013-15 Submission employee expenses ($'000)

Source	2010-11	2011-12	2012-13	2013-14	2014-15
Information Template[28]	60,739	57,440	56,419	58,092	59,950
Information Return[29]	60,739	57,500	56,500	58,100	59,900
Difference	0	60	81	8	-50

A more detailed breakdown of the employee and contractor expenses (excluding non-regulated expenses) for Unitywater is provided in Table 27.

Table 27 : 2013-15 Submission employee expenses by service ($'000)

Service	Category	2010-11	2011-12	2012-13	2013-14	2014-15
Drinking water	Employee expenses	14,057	14,035	13,566	14,082	14,523
	Contracted services	2,446	1,379	541	652	676
Other core water services	Employee expenses	809	734	846	963	993
	Contracted services	1,316	1,027	879	372	385
Wastewater via sewer	Employee expenses	29,337	28,873	30,482	31,590	32,579
	Contracted services	10,442	8,507	6,443	6,830	7,076
Trade waste	Employee expenses	1,217	1,166	1,445	1,526	1,573
	Contracted services	32	19	34	98	101
All services (excluding non-regulated)	Employee expenses	*45,420*	*44,808*	*46,339*	*48,161*	*49,668*
All services (excluding non-regulated)	Contracted services	*14,236*	*10,932*	*7,897*	*7,952*	*8,238*
TOTAL (excluding non-regulated)		**59,655**	**55,740**	**54,236**	**56,112**	**57,907**
Non-regulated	Employee expenses	724	1,345	1,828	1,694	1,747
	Contracted services	360	355	355	286	296
TOTAL (Including non-regulated)		**60,739**	**57,440**	**56,419**	**58,092**	**59,950**

The forecast allocations for employee expenses and contracted services are shown in Figure 4-16 and Figure 4-17.

[27] Unitywater, *Price Monitoring Submission: 2013-15*, 28 June 2013, section 8.9.1, p. 28
[28] Unitywater, *QCA Templates - UW 2013-15 Regulatory Submission.xlsm*, 1 July 2013
[29] Unitywater, *Price Monitoring Submission 2013-15*, 28 June 2013

Figure 4-16 Employee Expenses from 2013-15 submission

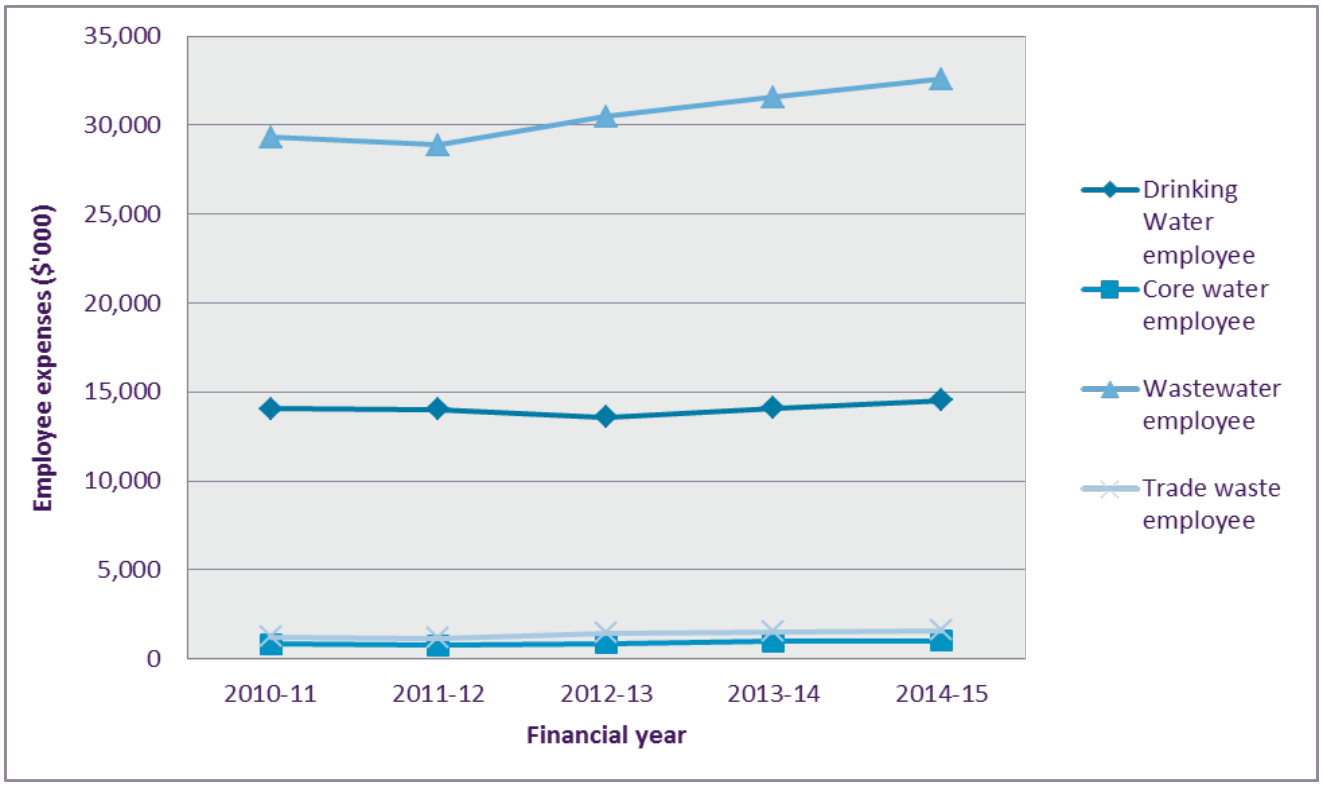


Figure 4-17 Contracted Services from 2013-15 submission

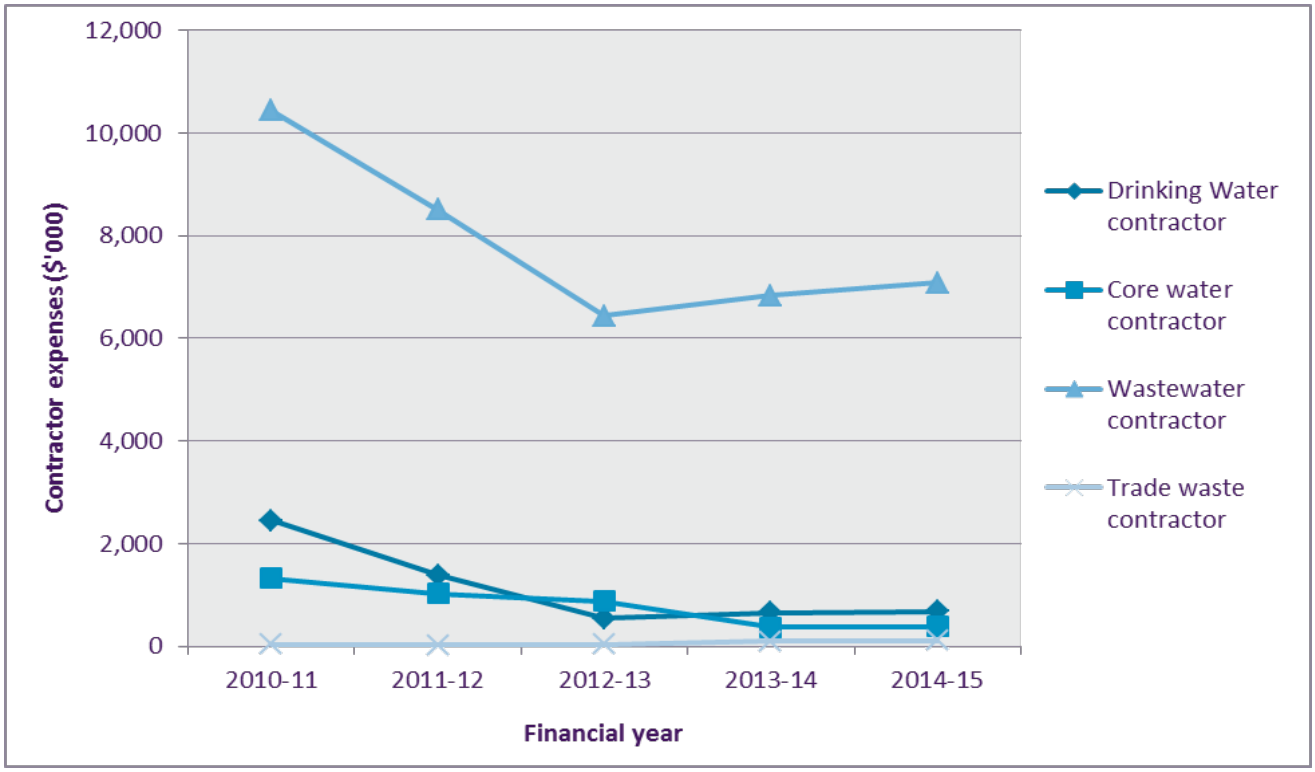


Table 28 : Percentage (%) and dollar ($'000) increases on the previous year's expenditure

Service	Category	2010-11 to 2011-12		2011-12 to 2012-13		2012-13 to 2013-14		2013-14 to 2014-15	
		$	%	$	%	$	%	$	%
Drinking water	Employee s	-22	-0.2%	-469	-3.3%	515	3.8%	441	3.1%
	Contracted	-1,067	-43.6%	-839	-60.8%	111	20.6%	24	3.6%
Other core water services	Employee s	-75	-9.3%	112	15.3%	117	13.9%	30	3.1%
	Contracted	-289	-22.0%	-148	-14.4%	-508	-57.7%	13	3.6%
Wastewater via sewer	Employees	-464	-1.6%	1,609	5.6%	1,109	3.6%	989	3.1%
	Contracted	-1,935	-18.5%	-2,065	-24.3%	387	6.0%	246	3.6%
Trade waste	Employee s	-51	-4.2%	279	23.9%	80	5.6%	48	3.1%
	Contracted	-13	-40.6%	15	81.9%	64	187.0%	3	3.6%
All services	*Employees*	*-612*	*-1.3%*	*1,531*	*3.4%*	*1,822*	*3.9%*	*1,507*	*3.1%*
All services	*Contracted*	*-3,304*	*-23.2%*	*-3,035*	*-27.8%*	*55*	*0.7%*	*286*	*3.6%*
TOTAL		**-3,915**	**-6.6%**	**-1,504**	**-2.7%**	**1,876**	**3.5%**	**1,794**	**3.2%**

Unitywater has adopted a zero based budget methodology for estimating employee expenses, with the 2013-14 budget based on individual staff allocations to each business activity. On-costs and a 4% vacancy factor are included in the forecast allocations. A review of contractor use has been undertaken, with some contract values reduced or an apprentice FTE employed in lieu of a contract tradesperson. Unitywater has had experience with a contracted operator for one of its treatment plants where the plant was found to be non-compliant with Unitywater operating requirements and generally in poor condition. As a result, Unitywater is reviewing all contracted services to verify the cost effectiveness or otherwise of the arrangement.

Unitywater has advised that its employees were previously covered by the SEQ Distribution and Retail Water Reform Workforce Framework 2009 ("Workforce Framework") which protected terms and conditions of employment for those employees affected by the transfer of water and wastewater functions from local councils to Unitywater. The Workforce Framework provided employment security through no forced redundancies, and income and travel protection due to water industry reforms within either the local councils or the newly formed water entities. Whilst the Workforce Framework was repealed in December 2012, overarching provisions contained in Unitywater's Certified Agreement meant that the Workforce Framework remained in constructive effect until its original end date of 30 June 2013.

Within the terms of the Workforce Framework, Unitywater established its first Certified Agreement[30] (No. 1 - 2011) which included the following provisions:

- Staggered shifts to better align workforce availability with customer needs and work requirements
- A new afternoon shift for field based staff to provide better and more cost effective emergency response
- On-site start/finish work arrangements for field service crews
- Pay parity across the workforce streams
- Consolidation and simplification of allowances

The afternoon shift starts at 1pm and ends 10pm. As many of the emergency response events typically occur between 4pm and 6pm, this shift is intended to reduce costs for emergency call-outs by eliminating 4 hour minimum call-out and double time call-out roster allowances. Field staff are rotated through this shift, and paid at 130% of normal rate with no call-out allowances.

[30] ibid., p. 29 It should be noted that these arrangements were in place in time for the 2012/13 pricing review. There were 45 voluntary redundancies taken in 2012/13 (with a saving of $3.4M) without detriment to service levels.

4.7.2 Provided documentation

The key reference documents used for this review are:

- 1a. Price Monitoring Submission 2013-15, Unitywater, 1 July 2013
- 1b. Appendices 1-7 Price Monitoring Submission 2013-15, Unitywater, 1 July 2013
- Extract – Board Minutes, Unitywater, 1 July 2013
- QCA Templates – UW 2013-15 Regulatory Submission.xlsm, Unitywater, 1 July 2013
- Cost Escalation and Growth Indices 13-14.xls, Unitywater, Date Unknown
- Response to RFI- UW 007-013, Unitywater, 12 July 2013
- Response to RFI- UW 020 (Budgeting and Procurement), Unitywater, 12 July 2013
- Procurement and Disposals Policy, Unitywater, 1 September 2011
- Capital Works Planning Manual, Unitywater, 18 February 2013
- 2013/14 Budget and 5 Year Forecasts – Forecast Guidelines, Unitywater, Date Unknown
- 2013/14 Budget Targets and Principles Memorandum, Unitywater, 15 November 2012
- Key Assumptions for 13-14 Budget and Five Year Forecast, Unitywater, 27 February 2013
- 2013-14 Budget and Five Year Forecast Assumptions, Unitywater, 27 February 2013
- 2013-14 Budget v 12-13 Budget and Forecast, Unitywater, 27 March 2013
- 2013-14 Budget Analysis, Unitywater, 27 March 2013
- 5 Year Outlook for QLD Electricity, Unitywater, Date Unknown
- Cost Allocation Model 13-14, Unitywater, Date Unknown
- Cost of Employee Expenses.xls, Unitywater, Date Unknown
- Cost Escalation and Growth Indices 13-14.xls, Unitywater, Date Unknown
- Electricity (A1689233).xls, Unitywater, Date Unknown
- Fact Sheet Superannuation Rate Increase, Australian Government, 26 July 2011
- Full-Time Employees (A1689233).xls, Unitywater, Date Unknown

4.7.3 Prudency

SKM understands that the expenditure on employee costs is used to meet the following driver categories:

- Legal obligations
- Operations and maintenance of existing infrastructure

Unitywater is required to supply drinking water and treat wastewater to meet license conditions for public health and environmental discharge limitations. The engagement of labour to operate and maintain the infrastructure under the responsibility of Unitywater is required to fulfil its obligations and therefore SKM is of the opinion that this expenditure is prudent.

4.7.4 Efficiency

Unitywater has identified a global target of 5% efficiency savings (refer section 3.3.2)[31] for controllable costs in their pricing submission. SKM was advised by Unitywater that no additional FTEs are being approved. The vacancy rate is currently 4%.

[31] Based on Unitywater Strategic Plan 2013-18

SKM has insufficient information to review the number of FTEs used for each of the different water services, or to identify the FTEs included in the Employee Expenses allocations and those included within Corporate Costs. Therefore, the following analysis examines all FTEs across the different divisions of Unitywater, and includes a comparison with the number of FTEs identified during the 2012-13 pricing review. In addition, the forecast costs for employees for 2013-14 include all FTEs, and the analysis examined the total overtime and other allocation for each division and branch. There was insufficient detail available to break down this analysis across the different water services.

4.7.4.1 Calculation of costs

Table 29 and Table 30 show the allocations of FTEs across the divisions and associated branches for the pricing submission 2013-15. A restructure of the divisions and the branches that are included within each division made a direct comparison difficult, but these tables highlight the differences in the total numbers to 2014-15.

Table 29 : Employee numbers by division 2011-12 and 2012-13[32]

Division	FTE for 2011-12	FTE for 2012-13	Variance
Office of the CEO	5.0	5.0	0.0
Business Support Services	93.0	91.0	-2.0
Retail	77.1	75.1	-2.0
Infrastructure Services	640.5	602.0	-38.5
ICT	48.0	45.0	-3.0
Workforce Capability & Change	31.2	30.2	-1.0
Finance & Regulatory Services	41.0	41.0	0.0
Business Initiatives	3.0	3.0	0.0
Corporate Finance	42.4	41.4	-1.0
Total	**981.2**	**933.7**	**-47.5**

Table 30 : Employee numbers by division 2013-14 and 2014-15

Division	FTE for 2013-14	FTE for 2014-15	Variance
Office of the CEO	12.6	12.6	0.0
People, Culture, Safety	78.5	74.5	-4.0
Retail Services	78.1	78.1	0.0
Infrastructure Services	470.6	470.6	0.0
Infrastructure Planning & Capital Delivery	174.5	171.5	-3.0
ICT	49.9	49.9	0.0
Finance & Regulatory	54.0	54.0	0.0
Total	**918.2**	**911.2**	**-7.0**

There is a reduction of 15.5 FTEs or 1.7% in 2013-14 and another 7 FTEs or 0.8% in 2014-15. SKM has insufficient information to identify from which division(s) the reduction of 15.5 FTEs in the 2013-14 forecast have been made.

Table 31 shows the forecast number of FTEs and the reductions for the periods 2013-14 and 2014-15.

[32] Halcrow, *SEQ Water and Wastewater Price Monitoring 2012-13: Unitywater*, section 5, table 5.23, p. 49, January 2013

Table 31 : Employee numbers by division & branch 2013-14 -2014-15

Division	Branch	FTE for 2013-14	FTE for 2014-15	Variance
Office of the CEO	Office of the CEO	4.9	4.9	0.0
	Company Sec & Board Administration	1.7	1.7	0.0
	Legal Services	6.0	6.0	0.0
People, Culture, Safety	Administration Services	39.0	35.0	-4.0
	Communications, Change, Engagement	7.0	7.0	0.0
	Human Resources	13.0	13.0	0.0
	People, Culture, Safety Executive	4.0	4.0	0.0
	Risk, Compliance & Quality	7.0	7.0	0.0
	Workplace Health & Safety	8.5	8.5	0.0
Retail Services	Customer Services	40.0	40.0	0.0
	External Communications & Marketing	5.0	5.0	0.0
	Programs & Information	13.0	13.0	0.0
	Retail Executive	2.0	2.0	0.0
	Revenue Assurance	17.1	17.1	0.0
	Stakeholder Management	1.0	1.0	0.0
Infrastructure Services	Field Services	298.0	298.0	0.0
	Construction Services	52.6	52.6	0.0
	Business Services	13.0	13.0	0.0
	Infrastructure Services Executive	2.0	2.0	0.0
	Network Operations	41.0	41.0	0.0
	Treatment Plants	64.0	64.0	0.0
Infrastructure Planning & Capital Delivery	Capital Delivery	55.0	55.0	0.0
	Infrastructure Capital Delivery Executive	2.0	2.0	0.0
	Strategic Planning & Asset Management	65.3	62.3	-3.0
	Technologies	52.2	52.2	0.0
ICT	Applications, Data & Legacy Systems	32.9	32.9	0.0
	Information & Communication Technology	2.0	2.0	0.0
	Planning & Project Delivery - ICT	4.0	4.0	0.0
	Strategy & Architecture	8.0	8.0	0.0
	Vendor Services - ICT	3.0	3.0	0.0
Finance & Regulatory	Corporate Performance	15.0	15.0	0.0
	Financial & Regulatory Executive	2.0	2.0	0.0
	Financial Control	19.0	19.0	0.0
	Pricing & Regulation	4.0	4.0	0.0
	Procurement	12.0	12.0	0.0
	Strategy & Business Development	2.0	2.0	0.0
Total		**918.2**	**911.2**	**-7.0**

Unitywater is moving to undertaking more preventative maintenance and less responsive maintenance. The target is to have a balance of 70% preventative and 30% responsive maintenance, which is seen as the optimal balance to avoid over-maintaining the assets.

Insufficient information has been provided to show the forecast impact of the change in maintenance approach, particularly with regards to the anticipated impact of more planned/less responsive on overtime. In addition, there is insufficient information regarding the anticipated use of external contractors to support this maintenance program. SKM noted an increase in total employee and contract expenses in wastewater (refer Figure 4-16 and Figure 4-17).

Table 28 indicates that the increase in the wastewater forecast is due to rising employee expenses in line with the Certified Agreement for internal FTEs and more contract work, but SKM noted that the level of responsive FTEs remain constant over period 2013-15.

The employee expenses for all operational divisions are shown in Table 32. These allocations includes all employee expenses, as the FTE information provided to SKM did not split the FTEs and costs across the different water services, but across the various operational divisions of Unitywater. The total 2013-14 employee expense for all operational divisions is $83.2 million, of which:

- $61.8 million are wages and salaries which includes direct salaries and excludes superannuation and annualised allowances
- $13.9 million are on-costs which includes superannuation, payroll tax, workers compensation, long service leave and annual leave
- $7.5 million related to overtime allowance and other costs which includes overtime, allowances and bonuses

Table 32 : Business-as-usual operational employee expenses for 2013-14[33]

Division	Service	Salaries & Wages	On-costs	Overtime and Other costs	Total	Overtime and Other as% of Total
Office of the CEO	Support	1,690,046	308,734	537,180	2,535,960	21.2%
People, Culture, Safety	Support	6,011,418	1,342,342	280,991	7,634,751	3.7%
Retail Services	Support	6,405,130	1,397,423	356,268	8,158,821	4.4%
Infrastructure Planning & Capital Delivery	Support	9,578,821	2,105,089	166,637	11,850,547	1.4%
ICT	Support	4,801,381	1,038,781	331,739	6,171,901	5.4%
Finance & Regulatory	Support	5,388,881	1,162,707	295,612	6,847,200	4.3%
Infrastructure Services	Maintenance	27,907,437	6,501,036	5,543,603	39,952,076	13.9%
Total		**61,783,114**	**13,856,112**	**7,512,030**	**83,151,256**	**9.0%**

From SKM's knowledge of the industry and experience of other utility sectors, SKM is of the opinion that the general industry benchmark for support services overtime is 2% or lower. Unitywater has advised[34] that the 9.0% contribution to the total forecast employee expenses shown in Table 32 includes both overtime and other expenditure relating to employee allowances. Unitywater has recalculated support services overtime excluding these allowances, and the analysis is shown in Table 33.

[33] Unitywater, *Attachment 13 - FTE (A1689233).xls*
[34] Unitywater, *Attachment 3: Operating Costs Management Response to SKM draft report*, 30 August 2013, p. 8

Table 33 : Support services overtime costs (values in nominal $'000s)

Division	Salaries & Wages (incl on-costs)	Overtime	Total	Overtime as% of Total
Office of the CEO	2,515,960	20,000	2,535,960	0.8%
People, Culture, Safety	7,634,751	-	7,634,751	0.0%
Retail Services	8,056,559	102,262	8,158,821	1.3%
Infrastructure Planning & Capital Delivery	11,850,547	-	11,850,547	0.0%
ICT	6,084,901	87,000	6,171,901	1.4%
Finance & Regulatory	6,847,200	-	6,847,200	0.0%
Total	**42,989,918**	**209,262**	**43,199,180**	**0.5%**

The level of overtime for support services is approximately 0.5% of the total support services salaries and wages, and therefore SKM is satisfied that this is lower than the general industry benchmark.

Table 34 shows the overtime and other allocations for Infrastructure Services. This division includes all field services which are working staggered shifts and an afternoon shift which attracts a 30% penalty rate.

Table 34 : Infrastructure Services employee expenses for 2013-14[35]

Branch	Salaries & Wages	On-costs	Overtime and Other costs	Total	Overtime and Other as% of Total
Business services	996,000	212,653	30,643	1,239,296	2.5%
Construction services	1,038,373	221,542	0	1,259,915	0.0%
Field services	17,825,807	4,167,377	4,415,104	26,408,288	16.7%
Infrastructure Services executive	291,973	154,063	47,597	493,633	9.6%
Network operations	3,498,055	766,278	222,349	4,486,682	5.0%
Treatment plants	4,257,229	979,123	827,910	6,064,262	13.7%
Total	**27,907,437**	**6,501,036**	**5,543,603**	**39,952,076**	**13.9%**

From SKM's knowledge of the industry and experience of other utility sectors, SKM is of the opinion that the general industry benchmark for maintenance overtime is 5% or lower[36]. Unitywater has advised that the maintenance services overtime shown in Table 34 includes employee allowances. Unitywater has recalculated maintenance services overtime excluding these allowances, and the analysis is shown in Table 35.

Table 35 : Infrastructure Services overtime costs (values in nominal $'000s)

Division	Salaries & Wages (incl on-costs)	Overtime	Total	Overtime as% of Total
Business services	1,239,296	-	1,239,296	0.0%
Construction services	1,259,915	-	1,259,915	0.0%
Infrastructure Services executive	493,633	-	493,633	0.0%
Network operations	4,394,783	91,899	4,486,682	2.1%
Treatment plants	5,544,825	519,437	6,064,262	9.4%

[35] Unitywater, *Attachment 13 - FTE (A1689233).xls*

[36] The benchmark for overtime is calculated as [no. of overtime hours]/[total no. of hours]. The recommended threshold value of 5% has been based on a benchmarking study conducted by Charles Brooks Associates which benchmarked maintenance best practice performance including labour productivity, work management, personnel management and maintenance costs in the US market. This 5% threshold for overtime is also recommended in a report by the US Department of Energy into O & M Best Practices.

Division	Salaries & Wages (incl on-costs)	Overtime	Total	Overtime as% of Total
Total	**12,932,452**	**611,336**	**13,543,788**	**4.7%**

In noting that the level of overtime for treatment plants appears high at 9.4%, Unitywater advised that *"… significant efforts have been made over the past 12 months to reduce Treatment Plant overtime. These initiatives have brought about a reduction in Treatment Plant overtime from 17.7% in 2012-13."*[37] Unitywater did not provide information in relation to any future initiatives to further reduce this level of overtime. SKM has calculated that the level of overtime expenditure in excess of the 5% threshold is approximately $104,000. Given the general assumptions[38] that SKM has applied (particularly as Treatment Plant operations can be weather dependent), and the calculated adjustment is relatively small compared to the total employee expenses 2013/14 forecast, SKM does not propose any reduction in the 2013/14 budget, but does recommend that this expenditure is monitored to ensure it does not exceed current levels.

For Field Services shown in Table 34, the identified forecast for overtime and other allowances in the 2013/14 forecast was $4,415,104 or 16.7% of the total $26.4 million budget. Unitywater has advised that *"… of the $4.4 M Field Services Overtime and Other Costs figure … only $1.9 M relates to overtime. $2.5 M relates to allowances, while the remaining <$50 k relates to incentive payments. Allowances have been budgeted to incorporate the impact of introducing the afternoon shift."*[39] SKM noted that the $1.9 million represents 7.2% of the total Field Services 2013/14 forecast. As above, SKM has calculated that the adjustment would be approximately $62,000, but as this is considered a minimal adjustment and the calculation is based on general assumptions, SKM does not propose any reduction in the 2013/14 budget, but does recommend the overtime level for Field Services is monitored.

4.7.4.2 Analysis of unit costs

Table 34 and Table 35 show the annual changes in unit costs for employee expenses and contracted services for both the volume of water purchased by Unitywater and the number of wastewater serviced properties.

Table 36: Analysis of employee expenses

	2011-12	2012-13	2013-14	2014-15
Total employee expenses ($'000)	44,808	46,339	48,161	49,668
Total water purchase (ML)	56,825	66,455	68,425	71,516
Average cost ($/ML)	788.5	697.3	703.9	694.5
Variance year-on-year (%)	-	-11.5	1.0	-1.3
Wastewater properties serviced	259,399	264,828	271,048	277,413
Average cost ($/property)	172.7	175.0	177.7	179.0
Variance year-on-year	-	1.3%	1.5%	0.7%

Table 37: Analysis of contracted services

	2011-12	2012-13	2013-14	2014-15
Total contractor expenses ($,000)	10,932	7,897	7,952	8,238
Total water purchase (ML)	56,825	66,455	68,425	71,516
Average cost ($/ML)	192.4	118.8	116.2	115.2
Variance year-on-year (%)	-	-38.3	-2.2	-0.9
Wastewater properties serviced	259,399	264,828	271,048	277,413
Average cost ($/property)	42.1	29.8	29.3	29.7

[37] Email from Unitywater 9 September 2013
[38] Calculations assume an average salary level and all overtime is costed at time-and-a-half hourly rates
[39] Email from Unitywater 9 September 2013

	2011-12	2012-13	2013-14	2014-15
Variance year-on-year (%)	-	-29.2	-1.7	1.4

Unitywater advised that the 2013-15 pricing submission has been based on a revised cost allocation methodology, and as result, there are costs that were previously identified as employee expenses or contracted services that have been reallocated as corporate costs. As a result, SKM considered the significant changes shown in Table 35 for contracted services unit costs to be in part due to the change in cost allocation.

The growth in water purchased is 3% in 2013-14 and 4.5% in 2014-15, whilst the growth for wastewater services is 2.3% per annum for both 2013-14 and 2014-15. The increases in employee expenses and contracted services are shown in Table 35 with employee expenses increasing by 3.9% in 2013-14 and 3.1% in 2014-15, and contracted services increasing by 0.7% in 2013-14 and 3.6% in 2014-15.

SKM has insufficient information to fully understand the impact of the staggered shift arrangements and the move to more planned maintenance is having upon the level of responsive maintenance that is being undertaken. The relatively consistent average cost per ML of water purchased, and cost per wastewater property suggests to SKM that the current work arrangements have contributed to some unquantified efficiencies as the maintenance costs are being held at a consistent level.

However, SKM has inferred from these relatively consistent year-on-year average costs that the level of maintenance operations are likely consistent with historical levels, which were evaluated during the 2012-13 price monitoring review as “Basic” (refer Section 4.7.5.2). That is, SKM considers the current organisation of work has achieved some cost efficiencies, but further improvements in processes and systems are required to achieve further efficiencies with field services employees and contractors.

SKM has considered it to be essential that the asset management system is much further developed to allow Unitywater to gain efficiencies in employee and contracted services costs through improved maintenance strategies and net gains from the move to more planned maintenance.

4.7.4.3 Market conditions

Unitywater advised that the current Certified Agreement will have a 3.8% increase in wages for 2013-14, together with the superannuation guarantee rising to 0.25% to 9.25%. In 2014-15, Unitywater has assumed that the labour costs will rise by 4.00%. The following table illustrates the forecast labour escalation factors.

Table 38 Wage escalation rates

Escalation factor	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Base rate of pay increase[40]	3.80%	3.80%	*4.00%*	*2.49%*	*2.49%*	*2.55%*	*2.60%*	*2.63%*
Superannuation growth		0.25%	*0.25%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*
Wage increase	**3.80%**	**4.05%**	***4.25%***	***2.99%***	***2.99%***	***3.05%***	***3.10%***	***3.13%***
Superannuation Guarantee	9.00%	9.25%	*9.50%*	*10.00%*	*10.50%*	*11.00%*	*11.50%*	*12.00%*

SKM noted that the staged increase in the superannuation guarantee from 9% to 12% is in accordance with the indicative timeline recommended[41] by the Federal Government in July 2011. Any changes in the superannuation guarantee scheme, including delays in the incremental rises or changes in the target rate should be reflected in the calculation of labour escalation. SKM acknowledges that any change would have to be made in consideration of any Certified Agreement that may be in place at the time.

[40] Unitywater, *Certified Agreement No. 1: CA/2011/359*, 18 January 2012, clause 2.1, p. 9 for 2012/13 and 2013/14 increases, *Attachment 10: Cost Escalation and Growth Indices 13-14.xls*, *Labour* worksheet , using Reserve Bank of Australia forecasts as at 21 Jan 2013 for increases beyond 2014-15

[41] Australian Government, *Fact Sheet: Superannuation - Increasing the Superannuation Guarantee Rate to 12 per cent*, 26 July 2011

SKM noted that clause 2.7 of the Unitywater Certified Agreement No. 1 2011 states that superannuation benefits for employees are to be provided in accordance with the Local Government Superannuation Trust Deed and Chapter 17 of the Local Government Act 2009. From a review of the Trust Deed[42], SKM noted that Part 5 includes a definition of "salary" as payment made by way of fixed remuneration including any allowance that is a permanent addition to that payment, but does not include *"… an amount paid by an employer for the superannuation guarantee charge*".[43] SKM concluded that the Unitywater have correctly calculated the annual wage increase as the increase in base rate plus growth in the superannuation guarantee.

Based on experience with other utilities around Australia, SKM is of the opinion that the 3.8% wage increase is high but consistent with that included in other Enterprise Bargaining Agreements either in place or under negotiation. SKM noted that Unitywater has highlighted difficulties in attracting skilled tradespeople and engineers, and SKM has observed elsewhere in the Australian market where entities have offered higher wages in similar circumstances.

SKM noted that the Unitywater Certified Agreement No. 1 2011 included provisions that relate to transitional arrangements from the previous Council structure to a single entity. In particular, all positions have *"… a position description which will be used as the primary source of classifying positions.*"[44] However, *"… employees whose classification level through the evaluation process is confirmed at a level lower than their current classification will have their wage maintained for the life of their employment with Unitywater (whilst they remain in that role) and will continue to receive all future applicable Agreement increases (Unitywater will not absorb any future pay increases) during this period. Affected employees will not be disadvantaged under any circumstances and may compete for positions at their current classification level.*"[45] This is part of the "no disadvantage test" as within the transfer arrangements referred to in the Certified Agreement. SKM has not undertaken any analysis to determine the number of current Unitywater employees that are affected by this sub-clause, or any impact it may have on field services expenditure forecasts.

4.7.5 Comparison against saving targets

4.7.5.1 Comparison with historic expenditure

A new Cost Allocation Method (CAM) has been used in developing the 2013-14 and 2014-15 forecasts, and many costs that have previously been included in Employee Expenses have now been reallocated as Corporate Costs. As a result, any comparison with previous expenditure under Employee Expenses would be distorted and potentially misleading.

4.7.5.2 Previously identified efficiency opportunities

In the 2012-13 price monitoring review, Halcrow highlighted an extract from the business case for the Consolidated Asset Management System which suggested potential gains that could be realised in the Field Services Area.

These gains were related to "wrench" time, which is *"… the time that field crews spend actually "doing the job", as opposed to travel, getting ready to start, etc.*"[46] The business case identified activities that impact of staff utilisation, with typical levels of activity for "basic", "improved" and "best-in-class" ratings.

Table 39 : Field staff utilisation activities

Activity	Basic	Improved	Best-in-Class
Personal	5%	5%	5%
Break and lunch	19%	19%	19%

[42] *Trust Deed of the Merged Queensland Local Government Superannuation Scheme*, consolidated to 5 December 2012
[43] ibid., p. 88
[44] Unitywater Certified Agreement No. 1 2011, CA/2011/359, clause 2.3, p. 9
[45] ibid., p. 10
[46] Halcrow, *SEQ Water and Wastewater Price Monitoring 2012-13: Unitywater*, section 5.3.2.7, p. 56, January 2013

Activity	Basic	Improved	Best-in-Class
Idle time	6%	3%	0%
Getting parts	17%	8%	1%
Getting tools	4%	2%	1%
Travel time	13%	10%	5%
Instructions	6%	3%	1%
Wrench time	30%	50%	68%
Total	**100%**	**100%**	**100%**

The self-assessment of Unitywater in 2012/13 pricing review was that "*… given Unitywater's history of being recently formed from water businesses of a number of councils, it is anticipated that it is much closer to "basic" than best-in-class*".

After taking account of the reform initiatives in workforce practices that Unitywater had undertaken to that time, Halcrow speculated that "*… as a minimum … even a move from "Basic" to "Improved" field practices could yield productivity gains of approximately 15 percent (1.50/1.30) … this implies further reductions of approximately $3.84 million. Further gains, in the order of 12 percent, could then be expected with a further move to "Best in Class".*"[47]

The following savings[48] were recommended:

> *"Anticipated gains as Field Services operations move from "Basic" to "Improved" amount to approximately 15 percent. Halcrow therefore proposes a reduction equal to a further 5 percent of the Field Services employee budget for 2012/13 ($25.6 million), which amounts to $1.28 million or 2.5 percent of forecast total employee expenses. This does not account for further efficiencies in the Treatment Plants Division which is also expecting to be realising gains. Additional gains, potentially in the order of 5 percent per annum (of relevant budget components), would then be expected as field practise yield further productivity increase over the subsequent 2-3 years."*

4.7.5.3 Assessment of savings

In a response to SKM, Unitywater has highlighted the difficulties in addressing recommendations arising from the 2012-13 price monitoring review due to the timing of the release of the Authority's report and its annual budget process. However, Unitywater reiterated its corporate strategy to lower the cost-to-serve to its customers through efficiency initiatives.[49]

To illustrate this, Unitywater has advised the following cost savings in the Treatment Plants Branch (refer Table 40) and efficiency gains across Field Services (refer Table 41).

Table 40 : Treatment Plant savings (values in nominal $'000s)[50]

Cost	Forecast 2012/13	Price Escalation	Population Growth	Escalated to 2013/14	Budget 2013/14	Variance	Variance%
Labour	5,994	4.05%	0.00%	6,237	6,112	-124	-2.0%
Other	23,766	2.50%	2.35%	24,932	23,813	-1,119	-4.5%
Total	**29,760**			**31,169**	**29,925**	**-1,244**	**-4.0%**

[47] Halcrow, *SEQ Water and Wastewater Price Monitoring 2012-13: Unitywater*, section 5.3.2.8, p. 57, January 2013
[48] ibid.
[49] Unitywater, *Attachment 3: Operating Costs Management Response to SKM draft report*, 30 August 2013, p.10
[50] ibid.

Table 41 : Field Services efficiency gains (values in nominal $'000s)[51]

Cost	Forecast 2012-13	Price Escalation	Population Growth	Escalated to 2013-14	Budget 2013-14	Variance	Variance%
Labour	25,287	4.05%	0.00%	26,311	26,000	-311	-1.2%
Other	20,667	2.50%	2.35%	21,681	20,498	-1,183	-5.5%
Total	**45,954**			**47,992**	**46,498**	**-1,494**	**-3.1%**

SKM has identified[52] the escalation factors used by Unitywater as:

- 4.05% reflects the wage increase (3.8% plus 0.25% superannuation guarantee increase) covered by the current Certified Agreement 2011/359
- 2.50% is the Consumer Price Index value based on a Reserve Bank of Australia statement of November 2012
- 2.35% is the average dwelling growth factor for the Unitywater region, based on Queensland Government household and dwelling projections

SKM noted that 90% of the saving in the 2013-14 forecast for Treatment Plant operations is due to efficiencies under "other" costs, which SKM infers are costs that would be categorised as Other Materials and Services. SKM has also noted that the number of FTEs (64.0) remained unchanged from 2013-14 to 2014-15 (refer Table 31), and the level of overtime for treatment plant employees is at 9.4% (refer Table 35) which is considered high.

The Halcrow recommendation for savings was based on the Unitywater business case which highlighted potential cost efficiencies from improved field staff utilisation. Whilst SKM noted the efficiency gains advised by Unitywater for Field Services (refer Table 41), the savings were mainly due to "other" efficiencies rather than due to reduced labour costs. Therefore, SKM does not consider that the Halcrow recommendation for annual savings due to improved field staff utilisation have been achieved, and proposes that the 5% reduction in the Field Services forecast for 2013-14 should be retained.

SKM is satisfied that Unitywater have demonstrated forecast savings for operation of the Treatment Plants for 2013-14.

4.7.6 Summary

The engagement of labour to operate and maintain the infrastructure under the responsibility of Unitywater is required to fulfil its obligations and is considered prudent.

Unitywater has committed to savings in employee and contractor expenses through workplace initiatives such as staggered shifts, an afternoon shift to respond to emergencies and on-site start and finish work arrangements for field crews and SKM has identified a number of these cost saving initiatives in the development of the FTEs for the 2013-14 budget. Unitywater has also provided documentation outlining several cost efficiencies in the 2013-14 budget, including forecast savings in both the Treatment Plant and Field Services branches.

SKM noted the levels of overtime for Treatment Plants (9.4% of total Treatment Plant 2013/14 forecast) and Field Services (7.2% of total Field Services 2013/14 forecast) appear high. The best-practice benchmark of 5% is based on the number of overtime hours compared with total hours. SKM considers the levels for both Treatment Plants and Field Services are reasonable, albeit high for Treatment Plants. SKM does not propose a reduction for the 2013/14 or 2014/15 budgets, but recommends that the level of overtime for both Treatment Plant and Field Services branches is monitored to ensure it does not increase from its current levels.

[51] Unitywater, *Attachment 3: Operating Costs Management Response to SKM draft report*, 30 August 2013, p.11
[52] Unitywater, *Attachment 10 - Cost Escalation and Growth Indices 13-14.xlsx*

However, SKM noted that Halcrow also recommended a reduction of 5% to the Field Services employee budget for 2012-13 based on anticipated gains as Field services operations move from “Basic” to “Improved” practices. The analysis undertaken by SKM of forecast average costs for water and wastewater employee allocations suggested that whilst cost efficiencies have been forecast for 2013-14, these are substantially in non-labour costs and this labour cost improvement has not yet been achieved. Therefore, SKM considers that the Halcrow recommendation is retained and proposes a 5% reduction on the Field Services employee expenses forecast ($26.4 million) or $1.32 million to the 2013-14 forecast.

In summary, the expenditure of labour in operating and maintaining the infrastructure has been considered by SKM to be not efficient, and SKM recommends a reduction of $1.32 million to the employee expenses allocation in the 2013-14 forecast, and $1.361 million in the 2014-15 forecast (based on the 3.1% cost category escalation from 2013-14 forecast).

Table 42 below classifies the documentation received and identifies any further information required to adequately review each section.

Table 42 : Employee Expenses quality of information provided

Section of OPEX review	Documentation Status	Additional Information Required
Prudency		
• Cost driver		
Efficiency		
• Calculation of costs		
• Market conditions		
Comparison against saving targets		Identified savings due to improvements in field services utilisation to be more clearly illustrated

4.8 Electricity expenses

4.8.1 Overview of operating expenditure

Electricity is used by Unitywater for transfer of water and wastewater, treatment of wastewater and corporate offices and buildings.

In the Information Return document Unitywater has stated that the expenditure for electricity is “*for pumping of water and sewage to and from customer’s properties*.”

Table 43 details the electricity expenditure detailed in the Information Template and in the Information Return document for Unitywater between 2011-12 and 2014-15. The data recorded in the table excludes non-regulated electricity expenditure. SKM has assumed that the Information Return data corresponds to this as it is included in the document submitted to the Authority. The electricity expenditure largely corresponds between the two documents.

Unitywater has proposed total non-regulated electricity expenses for the period of 2013-15 of $20.4 million.

Table 43 : Unitywater’s previous and proposed operating expenditure ($'000)

Source	2011-12	2012-13	2013-14	2014-15
Information Template	7.2	8.6	9.9	10.5
Information Return	7.3	8.7	10.0	10.7
Difference	**0.1**	**0.1**	**0.1**	**0.2**

Unitywater has proposed total electricity expenses for the period of 2013-15 of $20.359 million. Table 44 details the previous and proposed electricity expenses for Unitywater between 2011-12 and 2014-15 that are detailed in the Information Return template *QCA Templates - UW 2013-15 Regulatory Submission (2)*.

Table 44 : Previous and proposed operating expenditure ($'000)

Service	2011-12	2012-13	2013-14	2014-15
Drinking water	932.5	1,209.4	1,511.3	1,607.4
Other core water services	473.0	230.3	184.5	196.2
Wastewater via sewer	5,755.1	7,133.9	8,170.3	8,689.7
Trade waste	0.1	0.2	0.0	0.0
TOTAL	**7,160.7**	**8,573.8**	**9,866.1**	**10,493.3**

Table 45 : Percentage (%) and dollar ($'000) increases on the previous year's expenditure

Service	2011-12		2012-13		2013-14		2014-15	
	%	$	%	$	%	$	%	$
Drinking water	-	-	30	276.90	25	301.90	6	96.10
Other core water services	-	-	-51	-242.70	-20	-45.80	6	11.70
Wastewater via sewer	-	-	24	1,378.80	15	1,036.40	6	519.40
Trade waste	-	-	100	0.10	-100	-0.20	0	0.00
TOTAL	-	-	20	1,413.10	15	1,292.30	6	627.20

Unitywater have provided the following explanation with respect to how the electricity forecast is generated.

> *"With respect to the process associated with developing electricity volume forecasts for treatment plants, the following information applies:*
>
> - *The 2012-13 forecast kWh was used as a base*
> - *This was adjusted for commissioning of new plant and equipment to meet demand and environmental requirements, generally newer equals more electricity*
> - *Adjustments were made for growth (EP = equivalent person)*
> - *Design EP - Based on the Land Use Plan/ Planning Scheme and population projections received from the Office of Economic and Statistical Research. The planning scheme information is used to determine the development type in each of the catchment areas e.g. residential (low, high, etc) vs. non residential (commercial, retail, etc). The information is used to produce a demand population forecast as well as assumptions on the strength of waste to be produced*
> - *The actual EP is also an estimate based on a number of parameters e.g. hydraulic assessment (litres per second flow received at the treatment plants), solids loading, phosphorous entering the treatment plant, oxygen demand, etc. The various parameters are modelled to determine what the estimated actual EP is"*
>
> *"Unitywater wishes to note that there is $625,000 of additional costs in the 2013-14 electricity budget compared with the 2012-13 budget. This is largely explained by the fact that Unitywater took over the running of the Redcliffe STP. Electricity expenditure had previously been borne by the contractor, EGL."*[53]

[53] Unitywater, *Attachment 3 – Opex management response*, P12

4.8.2 Provided documentation

The key reference documents used for this review are:

- 1a. Price Monitoring Submission 2013-15, Unitywater, 1 July 2013
- 1b. Appendices 1-7 Price Monitoring Submission 2013-15, Unitywater, 1 July 2013
- Extract – Board Minutes, Unitywater, 1 July 2013
- QCA Templates – UW 2013-15 Regulatory Submission.xlsm, Unitywater, 1 July 2013
- Attachment 11 - Electricity (A1689169), Unitywater, no date
- Cost Escalation and Growth Indices 13-14, Unitywater, no date
- Attachment 3 – Opex management response, Unitywater, no date
- 5 Year outlooks for QLD electricity (134, Unitywater, no date

4.8.3 Prudency

The expenditure on electricity is used to meet the following driver categories:

- Legal obligations
- New growth
- Operations and maintenance of existing infrastructure

Unitywater is required to supply drinking water and treat wastewater to meet license conditions for public health and environmental discharge limitations. Electricity provides motive and process energy for the operation of these services.

SKM is of the opinion that, as the population of SEQ grows, additional water and wastewater services are required to be supplied. Electricity consumption is related to the quantity of water supply and wastewater processed and will therefore increase with population growth in the service area.

Electricity is an integral part of the operation and maintenance of the Unitywater's existing infrastructure as all pump stations, process plants and office facilities require electricity to function and operate safely.

The purchase of electricity for the operation of water supply, wastewater treatment plants and office facilities is required to fulfil Unitywater's obligations and hence, is prudent.

4.8.4 Efficiency

4.8.4.1 Calculation of costs

SKM is of the opinion that the expenditure is a variable cost and is expected to increase as usage increases and will also be affected by any electricity rate changes.

SKM was informed of Unitywater's process that was used to calculate the costs of electricity expenditure at a meeting with Unitywater on the 16 July 2013. Section 4.8.1 details Unitywater's approach to forecasting electricity usage. The following commentary has also been provided.

> *"Unitywater uses a combination of base year volumes and modelling. Base year volumes are taken and then modelled to reflect and incorporate expected:*
>
> - *Price changes*
> - *Demand changes*
> - *Improvements in technology*

- *Additional sites; and*
- *Upgrade of treatment plants, etc"*[54]

SKM was informed at the meeting that Unitywater factors in the effects of weather into its calculations for electricity costs.

This is to factor in the effect of increased flows through the sewer system, wastewater pump stations and treatment plants due to rainfall. This is factored into the expenditure calculation by assuming that future years have nine months of 'dry' weather and three months of 'wet' weather. March 2012 is used as the standard 'wet' month. Unitywater have provided the following explanation for this methodology.

> *"Unitywater acknowledges that there exists opportunities for a more scientific approach to be adopted in relation to how representative dry/wet months are determined. As additional data is captured, Unitywater will be in a position to more accurately incorporate this increase in understanding.*
>
> *"The current process, and the methodology for selecting March was based on discussions with the Managers in Field Services and Treatment Plants, plus a review of electricity cost figures for the year. This indicated that March 2012 allowed for a Full Wet Weather month, on the basis that the main wet weather months over the past few years had been January, February and March. Given this Unitywater considered it reasonable to apply 3 months for wet weather and 9 months of dry weather. As Unitywater captures more accurate data on usage across the STP's and Network, a more scientific approach will be adopted."*[55]

SKM considers that this process requires further refinement as it is a very course method of factoring for the effects of precipitation. SKM have conducted a brief reviewed of Bureau of Meteorology data for rain gauges around Caboolture, which indicate that the norm could be four months of wet weather per year rather than three. These rain gauges are respectively at Wamuran and at Beerburrum Forest Station.

This highlights the arbitrary nature of the approach undertaken by Unitywater, which could as likely lead to an under estimation of the expenditure as an over estimation. SKM is of the opinion that the approach be amended to a more refined approach.

In the response to RFI UW 007 – 013 Unitywater provided the spreadsheet *Attachment 11 - Electricity (A1689169)*, which is a breakdown of the cost calculation. No formulae are contained in this spreadsheet however; SKM has conducted a review of the spreadsheet to understand the cost calculation process. The sources of the inputs are not stated.

The spreadsheet details each of Unitywater's assets and the associated electrical expenditure. The sum of the column titled "amount" matches the sum of electrical expenditure for 2013-14.

The spreadsheet lists the kilowatt hours for the current year, the annual growth and the budgeted allowance, which is a sum of the first two entries.

A price escalation index of 7.32% has been applied to the "Current Year Amount" for each asset. This percentage increase matches the value in the *Escalation Assumptions* tab of the *Cost Escalation and Growth Indices 13-14* spreadsheet for 2013-14. SKM's calculations of the data in the *Escalation Assumptions* tab agree with these figures, allowing for minor rounding errors.

The source for the escalation percentage is given as *"Rate for 2013-14 based on information from Energetix and QCA Draft Retail Tariff Determination Feb 2013."* These documents have not been provided for SKM's assessment.

[54] Unitywater, *Attachment 3 – Opex management response*, P13
[55] Unitywater, *Attachment 3 – Opex management response*, P13 & 14

Unitywater has, however, provided the spreadsheet *5 Year outlooks for QLD electricity (134* that contains the calculation of the price increase indices as is detailed in the following table, Table 46. SKM has added the percentage increases for each of the items for comparison.

Table 46 : Comparison of annual cost escalation data

Item	2012-13	2013-14	% variance	2014-15	% variance
Peak, $/ MWh (carbon exclusive)	$45.50	$44.28	-2.7%	$42.39	-4.3%
Off peak, $/ MWh (carbon exclusive)	$26.82	$26.54	-1.0%	$25.53	-3.8%
Carbon $/MWh premium	$20.36	$18.28	-10.2%	$17.05	-6.7%
LREC, $/ MWh	$4.26	$3.93	-7.5%	$2.06	-47.7%
SREC, $/ MWh	$6.77	$5.29	-21.9%	$3.42	-35.3%
GEC Charges $/ MWh	$0.22	$0.24	9.2%	$0.25	5.1%
Network Price Increases	15.29%	21.5%	-	15.0%	-
Network $	$3,310,352	$4,023,071	-	$4,626,532	-
AEMO Charge $	$40,770	$41,789	-	$42,834	-
Total Cost	$6,668,092	$7,156,045	-	$7,445,729	-

Unitywater have provided the following statement that addresses these differences.

> *"It should also be noted that the forecast price increase of 7.32% in our 13-14 budget is well below the contracted price increase of approximately 15%. The difference between forecast and actuals relates to an increase in the retail cost of electricity."*[56]

It is not clear why the contracted increases have not been utilised in the calculation. It is noted that SKM has not received the contracts and so this figure has not been verified. The table above illustrates that the unit cost of several charges decrease over the review period. The exception is the network price that increases substantially. Unitywater has stated in the spreadsheet the origin of the charges as follows:

- *"5% annual reduction in energy charges predicted for FY14 and FY15 with prices flattening over the next 3 years based on market outlooks"*
- *"Based on prices obtained in 2012 RFP"*
- *"Based on LREC and SREC percentage forecasts"*

SKM is of the opinion that Unitywater's explanation that the electrical expenditure increases are below "*the contracted price increase"* cannot be accepted.

SKM has noted that the *Summary QTC* tab of the *Cost Escalation and Growth Indices* spreadsheet details electricity growth indices that have been calculated "*(b)ased on 80% of growth in water demand*". It is not clear how these figures have been applied to the expenditure calculation.

SKM has analysed the data in *Attachment 11 - Electricity (A1689169)* in order to assess the cost increases in the spreadsheet against the cost increases in the Information Template. For most line items the spreadsheet *Attachment 11 - Electricity (A1689169)* allows for budget kilowatt-hours and then lists the predicted cost (in the column "Amount"). A number of line items contain the current year kilowatt-hours, a growth volume and the budget kilowatt-hours, which are again escalated to the predicted cost in the column "Amount" from the current year amount (ie the annual cost). For each line item the values for the current year amount and the predicted cost approximately matches the 7.32% cost escalation with variances between -0.80% and +5.2% due to rounding errors. These errors largely cancel themselves out with the difference between the total calculated by SKM and the Information Template being only $2.

[56] Unitywater, *Attachment 3 – Opex management response*, P13

SKM has undertaken an analysis of the data provided in this spreadsheet, *Cost Escalation and Growth Indices* and has identified the discrepancies with some of the values used in the 'Summary QTC' tab.

Unitywater has interpolated populations using the OESR medium series population data. These calculations are acceptable; however, SKM has identified discrepancies with the subsequent demand projections/ indices.

The tab 'Summary QTC' splits the data into the two regions of Unitywater, namely Moreton Bay Regional Council and Sunshine Coast Regional Council.

The calculations use the predicted populations and predicted per capita demands to calculate the total water demand for each region. The percentage increase per year is then calculated. As stated previously, Unitywater has assumed that there is a correlation of 0.8 between the growth for electricity and the demand growth.

The discrepancies that SKM has identified are:

- Extrapolation of per capita demand differs between the two regions. The Moreton Bay Regional Council region reaches the 200 litre per head per day target in 2016-17 whereas the Sunshine Coast Regional Council region reaches the target in 2013-14. Furthermore the extrapolation of the per capita flow for Moreton Bay Regional Council region is not linear. No explanation or evidence has been provided with which to assess why there are different approaches or what the basis is of the non-linear increase in per capita flow. The increase has been calculated as greater than a linear increase for Moreton Bay Regional Council region.
- Unitywater provided figures for the total water demand for the two regions. Unitywater's figures differ to the values SKM has calculated even excluding the differences in per capita demand. SKM notes that Unitywater records the following comment against the line "Nathan to provide new numbers".
- No explanation has been provided as to why the growth factor for Electricity has been applied as 80% of the demand growth figure.
- As the two previous discrepancies influence the demand growth figure then the validity of the growth factor for the 'Electricity' item is also questionable.

SKM's calculations, using the provided data, result in the growth indices noted in Table 47. For comparison, SKM has used the same formula as Unitywater when calculating the annual increase in Electricity ie 80% of total water demand increase.

Table 47 : Unitywater & SKM Growth Indices Comparison

Item	2013-14	2014-15
Total Water Demand Increase (Unitywater)	7.29%	5.01%
Total Water Demand Increase (SKM)	6.12%	5.96%
Difference	**1.17%**	**-0.95%**
Electricity (Unitywater)	5.83%	4.00%
Electricity (SKM)	4.89%	4.77%
Difference	**0.94%**	**-0.77%**

The figures in Table 47 indicate that Unitywater has overestimated the increase in Electricity expenditure in 2013-14 by 0.949% and underestimated the expenditure for 2014-15 by 0.77%.

The figures have been calculated with the assumption that there is a 0.8 correlation between growth in water consumption and electricity demand. Insufficient details have been provided with which to establish if this correlation is reasonable. SKM does not accept this correlation due to the lack of evidence.

While Unitywater has stated that the basis of the growth indices are from two reports as these documents have not been provided it cannot be ruled out that the growth indices stated in the spreadsheet have not been used.

The factoring for inclement weather described previously is not apparent in the spreadsheet *Attachment 11 - Electricity (A1689169)*. As the sum of the figures in the column "amount" matches the submission total infers that this factoring has not been completed despite being described as part of the cost calculation process.

Table 48 details the analysis that SKM has undertaken during the assessment of the escalation factors for the electrical expenditure.

Table 48 : Analysis of Escalation Factors

Cost Escalation Indices	2013-14	2014-15
Escalation Assumptions[57]	7.32%	4.05%
Growth Indices[58]	5.83%	4.00%
Escalation Factor (compound)	13.58%	8.22%
Expenditure Increases (Information Template)	15.07%	6.36%
Calculated Factor (compound)	1.32%	-1.72%
Expenditure (compounded Price Indices)	$9.74 M	$10.54 M
Saving (from Information Template)	-$0.13 M	$0.04 M

SKM have calculated the compounded escalation factor for the years 2013-14 and 2014-15 as is demonstrated in the table. The figures are different to the escalation in the expenditure that is recorded in the Information Template with the factor for 2013-14 being less than the expenditure increase and inversely the factor for 2014-15 being greater than the expenditure increase. SKM has calculated the compound factor that results in the escalation factor calculated from the Information Return expenditure totals.

SKM's analysis has shown that Unitywater have over predicted their 2013-14 expenditure by a compound rate of 1.32%, which equates to $130,000. Conversely, Unitywater have under predicted their 2014-15 expenditure by a compound rate of -1.72%, equating to $40,000 based on the value SKM has calculated for 2013-14.

The cost escalations of 7.32% and 4.05% used by Unitywater are materially lower than the increase in electricity charges announced by the Authority in May 2013.[59] With respect to this SKM is of the opinion that the calculation of the costs is efficient.

4.8.4.2 Delivery of service

Unitywater has procured electricity through contracts with two external suppliers that relate to large sites (greater than 100 kWh) and small sites (less than 100 kWh). SKM has been informed that the small sites commenced a new two year contract last year and the large sites are on a one year contract. Unitywater has stated that it was not possible to obtain a greater length of contract for the large sites in order to manage market rate fluctuations as the market rejected the proposal due to the unknown impact of the Carbon Tax.

SKM was informed that the Unitywater Board has taken an interest in the procurement of electricity. The focus of the Board has been particularly on the impact of the Carbon Pricing Mechanism. Unitywater has determined that 'green' power is too expensive and hence is not a viable option to mitigate the impact of cost of carbon under the Carbon Pricing Mechanism.

Unitywater has stated that its aim is to "buy black and sell green" electricity, which due to the cost differences in the market will result in a saving. This statement has been supported by a statement in the Information Return document Unitywater that Unitywater has, and continue, to seek to reduce their electricity expenditure through "small scale electricity generation" utilising methane emissions from water treatment plant.

[57] Unitywater, *Cost Escalations and Growth Indices*, *Escalation Assumptions* tab
[58] Unitywater, *Cost Escalations and Growth Indices*, *Summary QTC* tab
[59] Queensland Competition Authority, *Final Determination: Regulated Retail Electricity Prices 2013-14*, May 2013

Unitywater's approach to the delivery of electricity has followed good industry practice.

In terms of delivery of service SKM assessed Unitywater's approach as being efficient.

4.8.4.3 Market conditions

Carbon pricing has an impact on the electrical expenditure. SKM was informed by Unitywater that no retailers offer pricing that includes the cost of carbon.

The forward market for electricity supply has been influenced by a number of variables that impact the price that a retailer would offer for future supply. An example of some of these variables is listed below:

- Recent (to retail offer) spot electricity market volatility
- Policy announcements and decisions – both State and Commonwealth
- Availability of market supply
- Consistency and predictability of load profile

In order to achieve efficiency in the market place good industry practices should be implemented. In the Procurement and Disposals Policy Unitywater has stated that "*Unitywater is designated as a 'Large Statutory Body' and is therefore bound by the State Procurement Policy*". This is indicative that the approach to procurement has been consistent with good industry practice.

The Procurement and Disposals Policy detailed the following methods for *"procuring goods and services with a value exceeding $150,000"* that the procurement of electricity falls under:

- *"By inviting formal public tenders by public advertisement;*
- *By inviting select tenders form suppliers- contractors included on a panel; and*
- *By preparing a Significant Procurement Plan for CEO approval."*

This approach is again demonstrative of good industry practice.

In terms of market conditions SKM has assessed Unitywater's electrical expenditure as efficient due to Unitywater's approach to procuring electricity.

4.8.4.4 Efficiencies and economies of scale

Unitywater has provided the following comments in the Information Return document with respect to electrical expenditure.

> *"Unitywater is taking steps to reduce electricity … through:*
>
> - *Procurement and market tendering that result in saving from bulk purchase volume discounts;*
> - *Considering ways to create and use … small scale electricity generation;*
> - *Through the capital works projects to rationalise the number of pump stations in order to optimise network asset utilisation and operating expenditures; and*
> - *Using new technology such as variable frequency drive controllers and motors to reduce energy usage at pump stations and STPs.*
>
> *Unitywater considers these and other initiatives will result in reduction of the number of kWh required whilst maintaining the desired level of service for water supply and sewage transport and treatment."*

Further details have been provided of the plan for beneficial re-use of sewage in the Information Return document as follows:

> *"Unitywater has a long term plan to examine innovative ways of processing sewage collected and turning it into a variety of valuable by-products. The essence of this idea is to turn treatment plants into factories to provide better environmental outcomes, generate income and reduce costs to customers. Possibilities include recovering phosphorus for fertiliser, extracting trace metals for re-use, and harvesting methane gas for energy recovery."*

Unitywater has undertaken trials to confirm and quantify potential savings. Two examples were explained to SKM:

- Trial of a more energy efficient pump by Xylem at a pump station. This has resulted in a 50% electricity usage reduction at the pump station.
- Trial of Variable Frequency Drives (VFDs). No indication was given as to the success of this trial.

SKM was informed that the trials are currently being undertaken at one asset each and if successful a wider trial will be undertaken to better understand the opportunity. SKM understands that a wider trial is planned for the Xylem pump due to the success of the small scale trial. These trials are less likely to realise material savings in the short terms due to being implemented in a small number of sites. They are however, more likely to achieve savings in the long term. SKM understand that Unitywater has commissioned wider trials of the Xylem pump following the initial, successful trial.

From our knowledge of the market, SKM understands that Unitywater has sought, and is continuing to seek, to rationalise its network and treatment facilities through their capital investment program. Some design projects have included scope to investigate 'green' energy assets at new or existing sewage treatment plants.

This approach is consistent with good industry practice.

With respect to efficiencies and economies of scale SKM assessed Unitywater's electricity expenditure to be efficient due to their approach to identifying efficiencies and savings.

4.8.4.5 Benchmarking

It has been difficult to compare electricity expenditure between entities as electricity consumption is a function of:

- Population demand habits
- Local topography and water and wastewater piping hydraulic characteristics
- Number of pumping stations

An alternative method for benchmarking entities in terms of assessing energy efficiency has been to review energy consumption in wastewater treatment operations. The data provided is not disaggregated in sufficient detail to undertake such an assessment and, further, the results could be distorted by inclement weather influencing regional wastewater flows.

In the response to RFI UW 007-013 where SKM requested results of internal benchmarking Unitywater state that no internal benchmarking has been undertaken. This is contradicted by the following statement.

> *"Unitywater has been, and continues to be involved in a number of benchmarking initiatives which seek to ensure prudency and efficiency is embedded across all areas of the business."*[60]

Unitywater have provided summary details of the following completed and planned benchmarking activities[61]:

- Corporate Reputation Index
- Customer Satisfaction Index

[60] Unitywater, *Attachment 3 – Opex management response*, P14
[61] Unitywater, *Attachment 3 – Opex management response*, Attachments O, P and Q

- International Asset Management Performance Improvement Program 2012
- 2012 Water Industry Civil Maintenance Benchmarking Program
- Customer Debt Metrics
- ICT Benchmarking Survey
- National Performance Report
- Procure to Pay
- Business Resilience
- Remuneration and Benchmarking
- Corporate Reputation Index
- Customer Satisfaction Index
- ICT Service Delivery Model

The summaries provided indicate that none of these benchmarking activities addressed specifically electrical expenditure.

SKM understands that the cost driver for the expenditure is mainly water demand, the number of plants and the length of network.

Insufficient details have been provided with regards to benchmarking of electrical expenditure.

From the results of our benchmarking SKM has assessed the electrical expenditure as not being efficient as insufficient details have been provided.

4.8.5 Comparison against saving targets

SKM has compared the entities 2012-13 and 2013-15 submissions, which is presented in Figure 4.18. The graph shows an almost linear increase from the 2010-11 data.

This is misleading as the differences between the 2012-13 recommendations and the 2013-15 submission are not linear for the six sub-categories (ie Drinking Water, Other core water services, Wastewater via sewer, Trade waste, Other core wastewater services, Aggregate non-regulated services). This variance in the two data sets is demonstrated in Figure 4-19 and is also shown in Figure 4-20. Figure 4-19 demonstrates that expenditure for the 'Drinking water' and 'Wastewater via sewer' categories have been consistently greater than the recommended value. For the review period (Financial Years 2013-14 and 2014-15) 'Drinking water' is less than half the difference recorded in 2012-13, which peaked at around 85%.

The expenditure on the 'Trade waste' category shows that efficiencies are expected to be realised for the review period (Financial Years 2013-14 and 2014-15) as the graph indicates that the expenditure is predicted to be less than the recommended sum for the first time in these two years.

The expenditure on 'Other core water services' is consistently below the recommended sum, which infers that it is efficient.

The graph shows that for all year's 100% of the expenditure on "Other core wastewater services' is less than the recommended value. This is due to the 2013-15 submission recording zero expenditure for this item including historical years. SKM understands that a new procedure has been applied to cost allocation methodology, which may explain this if it has been applied to historical years in addition to future years.

Figure 4-18 : Comparison of 2012-13 submission and 2013-15 submission

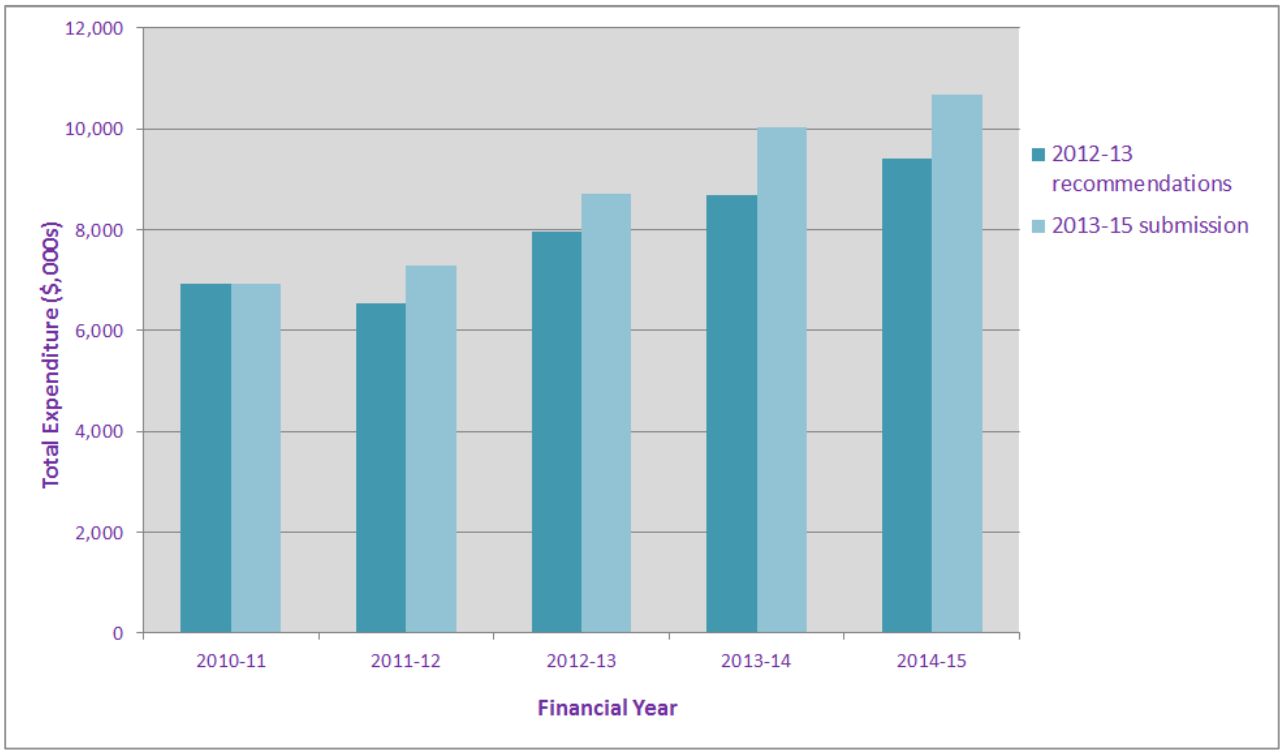
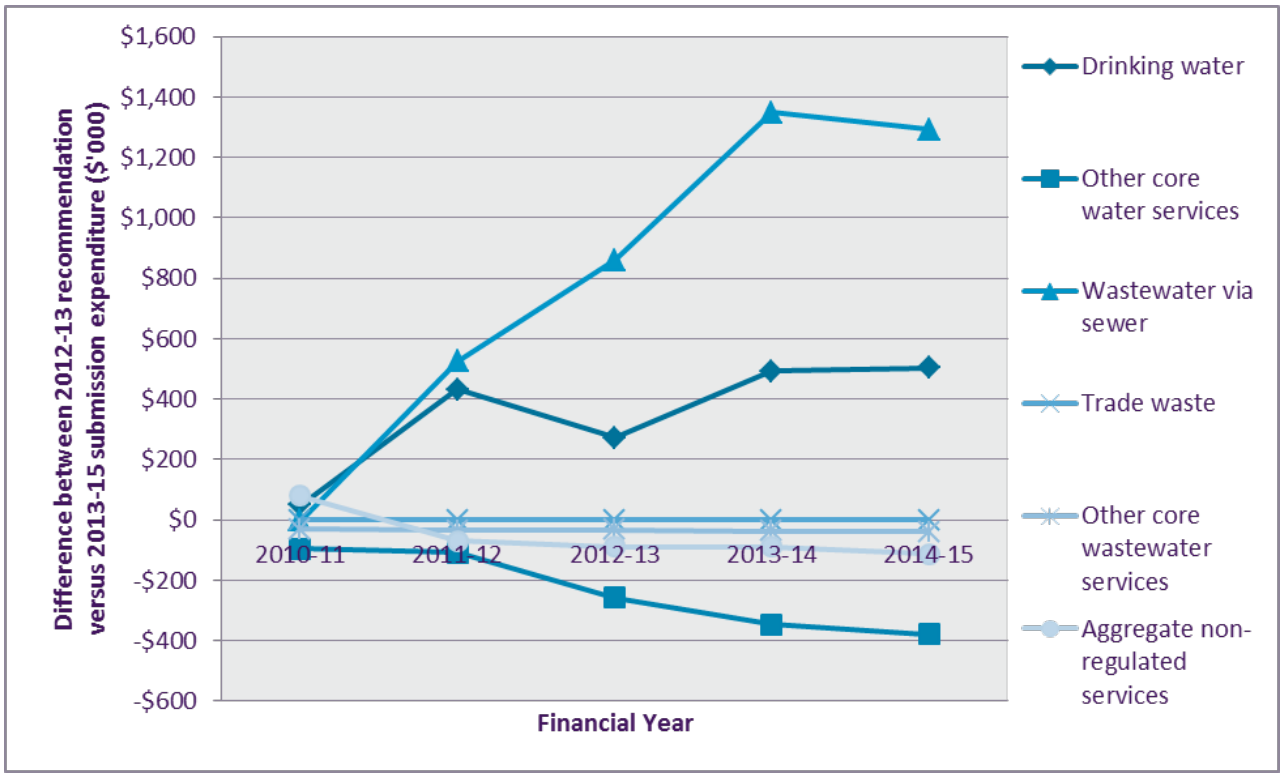


Figure 4-19 : Difference between 2012-13 recommendation and 2013-15 submission expenditure



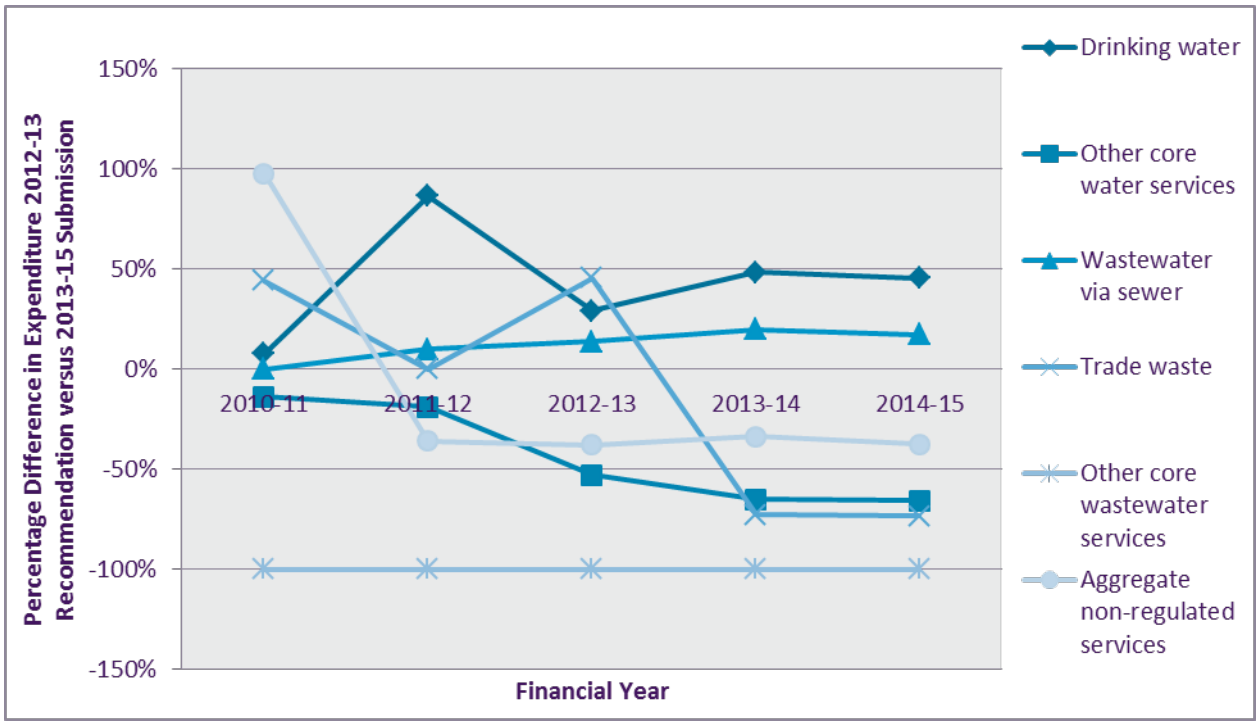
The data in Figure 4-20 demonstrates that expenditure for the 'Drinking water' and 'Wastewater via sewer' categories have been consistently greater than the recommended value. For the review period (Financial Years 2013-14 and 2014-15) 'Drinking water' is less than half the difference recorded in 2012-13, which peaked at

around 85%.The expenditure on the 'Trade waste' category shows that efficiencies are expected to be realised for the review period (Financial Years 2013-14 and 2014-15) as the graph indicates that the expenditure is predicted to be less than the recommended sum for the first time in these two years.

The expenditure on 'Other core water services' is consistently below the recommended sum, which infers that it is efficient.

The graph shows that for all year's 100% of the expenditure on "Other core wastewater services' is less than the recommended value. This is due to the 2013-15 submission recording zero expenditure for this item including historical years. SKM understands that a new procedure has been applied to cost allocation methodology, which may explain this if it has been applied to historical years in addition to future years.

Figure 4-20 : Percentage difference between 2012-13 recommendation and 2013-15 submission expenditure



As stated previously Unitywater has stated that the change in operation of the Redcliffe Sewage Treatment Plant is the main reason for the increase in wastewater expenditure. The sewage treatment plant is now operated by Unitywater as opposed to in previous year when a third party operated it and hence paid for the electrical expenditure. Unitywater have stated that the electrical expenditure for this sewage treatment plant is around $625,000, which approximately corresponds with the increase observed. This figure is around 48% of the cost increase for 2013-14 for wastewater electrical expenditure. The sum is also around 46% of the difference between the recommended value for 2013-14 and the submission value.

Without the cost of electricity that is required to operate Redcliffe Sewage Treatment Plant the expenditure is still above the recommended sum by 11% and 9% for 2013-14 and 2014-15 respectively.

Unitywater's approach to identifying savings, such as through trialling new or alternative technology, means that cost savings are less likely to be realised during 2013-14 but are expected to be realised in 2014-15 and the longer term.

SKM considered these trends to be evidence of not efficient expenditure.

The Halcrow review of 2012-13 recommended that the expenditure for 2012-13 be reduced by $0.72 million. The Authority's recommended expenditure is about $1.3 million less than Unitywater's expenditure for both

2013-14 and 2014-15. SKM has not found evidence that these targets have been met in the 2013-15 submission. Unitywater have stated that:

> *"It is not practical to investigate, plan for, implement and derive savings within a three month timeframe (ie. from receipt of the QCA report and 1 July of the following year). Investigation of initiatives take time from an R&D perspective and also to ensure that economic benefits associated with the initiatives can be realised."*

SKM consider that the timing of the savings targets being delivered to Unitywater is out with the scope of this review and should be discussed with the Authority.

SKM is of the opinion that the saving targets have not been met and recommends that the target sum of $0.72 million be withdrawn from the final determination for 2013-14. This sum equates to the Authority's recommendation minus the electrical operating expenditure for the Redcliffe Sewage Treatment Plant. Similarly the sum of $0.79 million should be withheld from the 2014-15 expenditure. This equates to the 2013-14 savings escalated by the SKM calculated growth index 4.77% and by Unitywater's price index of 4.05%.

4.8.6 Summary

SKM has determined that the expenditure is required to meet legal obligations, to meet new growth and to allow the operation and maintenance of existing infrastructure.

The electrical expenditure is therefore assessed as prudent.

Unitywater's approach to the delivery of service, to market conditions and to efficiencies and economies of scale has been assessed as efficient.

SKM has identified discrepancies in the calculation of growth indices and that there has been no justification for the correlation between growth in water consumption and electricity demand.

In terms of calculation of benchmarking, SKM has assessed the electrical expenditure as not being efficient due to a lack of data provided.

SKM is of the opinion that Unitywater has not demonstrated progress against the savings targets set by the Authority.

Therefore the expenditure is assessed as not being efficient.

The progress of savings against the targets should be reported to monitor and assess performance against these targets.

Table 49 below identifies the revised operating expenditure for Electricity.

Table 49 : Electrical expenditure revised operating expenditure

Source	2010-11	2011-12	2012-13	2013-14	2014-15
Information Template	-	7.2	8.6	9.9	10.5
Revised forecast	-	-	-	9.1	9.7

4.9 Other materials and services expenses

4.9.1 Overview of operating expenditure

The Other Materials and Services category covers a range of different expenses that are not directly allocated to other defined categories.

Unitywater have stated that:

> *"The expenditure category Other Materials and Services has been used as a 'catch all' for expenditure that does not meet the criteria for inclusion within more precisely defined expenditure categories. As such a wide variety of items (that is materials and services) have been classified as Other Materials and Services. The major expenditure items include:*
>
> - *External fleet hire;*
> - *Consumables and materials;*
> - *Pipes and fittings;*
> - *Repairs and maintenance;"*[62]

Unitywater has proposed total expenses for Other Materials and Services for the period of 2013-15 of $19.4 million.

Table 50 details the Other Materials and Services expenditure detailed in the Information Template and in the Information Return for Unitywater between 2011 and 2015. There is no inconsistency in the values presented.

Table 50 : Unitywater's previous and proposed operating expenditure ($'000)

Source	2011-12	2012-13	2013-14	2014-15
Information Template	11.3	13.5	12.9	13.3
Information Return	11.3	13.5	12.9	13.3
Difference	**0.0**	**0.0**	**0.0**	**0.0**

Table 51 shows the previous and proposed other materials and expenses for Unitywater between 2011 and 2015.

Table 51 : Previous and proposed operating expenditure ($'000)

Source	2011-12	2012-13	2013-14	2014-15
Drinking water	3206.00	3,133.70	2,905.30	3,002.00
Other core water services	138.80	208.10	102.10	105.50
Wastewater via sewer	6,110.20	7,687.20	8,014.60	8,281.50
Trade waste	80.60	103.60	51.40	53.10
Subtotal regulated services	*9,488.00*	*9,535.61*	*11,132.73*	*11,073.35*
Non-regulated	1717.54	2369.91	1831.12	1892.11
TOTAL	**11253.15**	**13502.64**	**12904.47**	**13334.28**

The differences between the annual expenditure values provided in the Information Template are detailed in Table 52.

The data shows that for the 2013-14 Financial Year a reduction in expenditure is expected for all categories except for 'Wastewater via sewer'.

Two categories, 'Other core water services' and 'Trade waste', show large reductions of around 50% that follow large increases the previous year of respectively 50.0% and 28.6%.

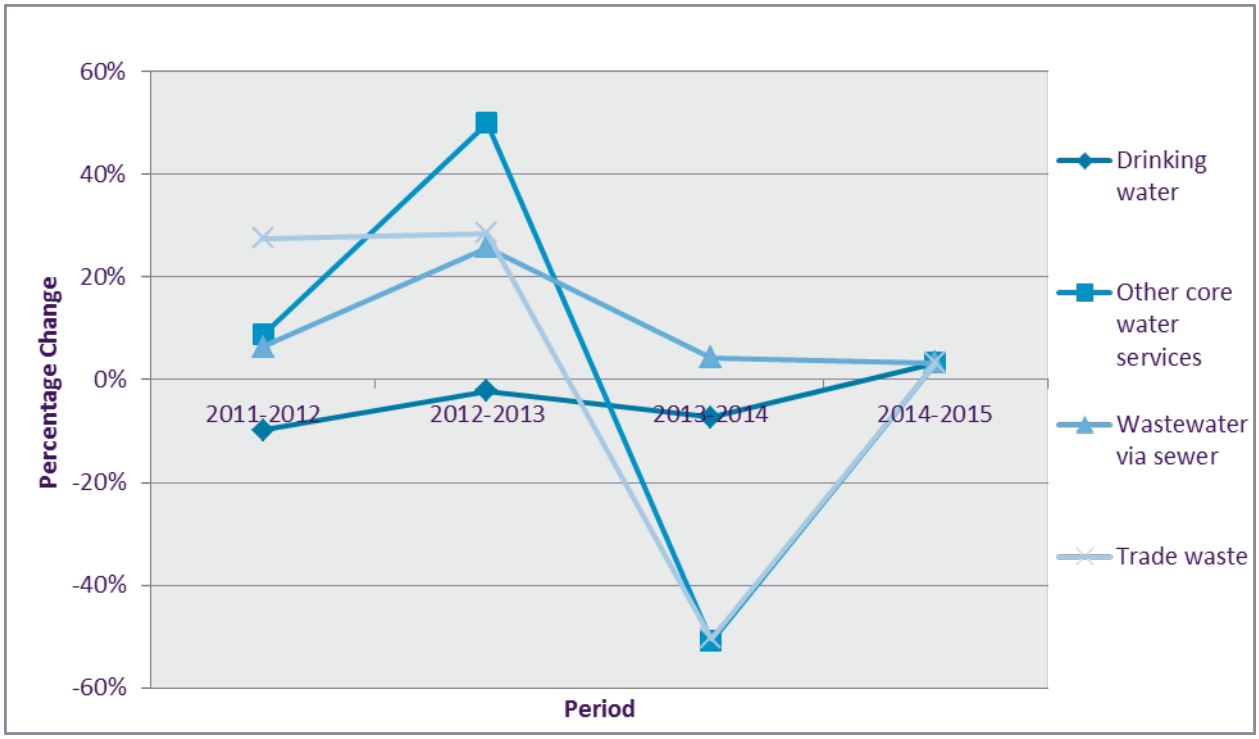
[62] Unitywater, *Attachment 3 – Opex management response*, P14

SKM's analysis shows that a factor of 3.3% has been applied to all categories for the 2014-15 Financial Year. The percentage differences are also shown in Figure 4-21.

Table 52 : Dollar ($'000) and percentage (%) variances on the previous year's expenditure

Source	2010-11 to 2011-12		2011-12 to 2012-13		2012-13 to 2013-14		2013-14 to 2014-15	
	$	%	$	%	$	%	$	%
Drinking water	-	-	-72.3	-2.3%	-228.5	-7.3%	96.8	3.3%
Other core water services	-	-	69.4	50.0%	-106.0	-50.9%	3.4	3.3%
Wastewater via sewer	-	-	1577.0	25.8%	327.4	4.3%	266.9	3.3%
Trade waste	-	-	23.0	28.6%	-52.3	-50.4%	1.7	3.3%
Subtotal regulated services	-	-	*1597.1*	*16.7%*	*-59.4*	*-0.5%*	*368.8*	*3.3%*
Non-regulated	-	-	652.4	38.0%	-538.8	-22.7%	61.0	3.3%
TOTAL	**-**	**-**	2249.5	20.0%	-598.2	-4.4%	429.8	3.3%

Figure 4-21 : Annual Percentage Difference in Expenditure from previous year



4.9.2 Provided documentation

The key reference documents used for this review are:

- 1a. Price Monitoring Submission 2013-15, Unitywater, 1 July 2013
- 1b. Appendices 1-7 Price Monitoring Submission 2013-15, Unitywater, 1 July 2013
- Extract – Board Minutes, Unitywater, 1 July 2013
- QCA Templates – UW 2013-15 Regulatory Submission.xlsm, Unitywater, 1 July 2013
- 2013/14 Budget Target and Principles Memorandum, Unitywater, 15 November 2012

- Cost Escalation and Growth Indices.xlsm, Unitywater, No date provided
- Attachment 3 – Opex management response, Unitywater, no date
- Copy of Materials and Services by Natural Account, Unitywater, no date

4.9.3 Prudency

The expenditure category Other Materials and Services has been used as a 'catch all' for expenditure that does not meet the criteria for the other expenditure categories. As such a wide variety of items (ie materials and services) has fallen under the category.

The following statement is made in the Information Return document "(materials and services required to maintain assets (e.g. small consumable parts, landscaping supplies, traffic control services, plant hire, cctv inspection)". This implies that the expenditure on Other Materials and Services could have been used to meet the following driver categories:

- Legal obligations
- New growth
- Operations and maintenance of existing infrastructure

SKM is of the opinion that the expenditure relating to this category is aligned to Unitywater's asset management plans.

Unitywater has provided the following explanation of why their asset management plans are necessary and what the main expenditure categories are:

"Our asset management strategy is key in developing maintenance plans to optimise asset life, and to develop plans for renewing and replacing our network assets and catering for growth.

Initiatives to confirm that our assets are optimised include:

- Sewer overflow abatement activities such as smoke testing to detect illegal connections;
- Sewer corrosion and odour management plans to extend asset life; and
- System leakage management plans to minimise water losses including a trial of a solution which detects, and provides real-time information on network efficiency, hidden leaks and bursts.

The primary costs incurred are employee costs, and services to support a range of asset management activities."[63]

This demonstrates that the expenditure is required to deliver the regulated services.

SKM has considered this expenditure to be prudent.

4.9.4 Efficiency

4.9.4.1 Calculation of costs

SKM were informed that an allowance has been applied to take into account of inclement weather on the Other Materials and Services cost category.

The expenditure is calculated using a base year that consists of nine months of 'dry' weather and three months of 'wet' weather. The approach is discussed in more detail in Section 4.8.4.1. SKM is of the opinion that this approach requires further refinement to increase the confidence in the results.

[63] *1a. Price Monitoring Submission 2013-15,* Unitywater, 1 July 2013

A breakdown of the costs has been provided in *Copy of Materials and Services by Natural Account*. The total for 2013-14 matches the figure in the Information Template.

SKM understands that Unitywater's approach to asset management planning will have affected the calculation of the costs for this category of expenditure. As stated previously Unitywater's asset management expenditure are primarily incurred through "*employee costs, and services to support a range of asset management activities*".

Unitywater has modelled their asset management planning using an Institute of Asset Management model that has been based on PAS55 *Optimal management of physical assets*. SKM has been informed that Unitywater has sought to align this model with ISO55000 the international standard for asset management.

SKM understands that the asset management modelling has been assessed by the Capital Works Committee, the Asset Steering Committee and the Investment Steering Committee. This has followed good industry practice that should have ensured that the results are interrogated to help drive efficiency in the expenditure.

The spreadsheet *Cost Escalation and Growth Indices* that was provided in the response to *RFI UW 007 – 013* provides details of the indices that appear to be relevant to the Other Materials and Services expenditure. The data in the spreadsheet is for Financial Year 2013-14 onwards. Some line items have values for December 2013 in addition to the Financial Year data.

Two items are detailed in the *Summary QTC* tab that relates to this cost category, as follows:

- 'Materials and Services ISD': the growth indices for this item are "(m)atched to ISD labour growth" that has been assumed to be fifty per cent of the demand increase. The demand increase has derived from the "(c)onnected population grown at OESR medium series rate and applied to forecast average (sic) consumption rates".
- 'Materials and Services Other': this item has zero growth applied to it.

SKM has undertaken an analysis of the data provided in this spreadsheet, *Cost Escalation and Growth Indices*.

Unitywater has interpolated populations using the OESR medium series population data. SKM agrees with these calculations however SKM has identified discrepancies with the subsequent demand projections/ indices.

The tab 'Summary QTC' splits the data into the two regions of Unitywater, namely Moreton Bay Regional Council and Sunshine Coast Regional Council.

The calculations use the predicted populations and predicted per capita demands to calculate the total water demand for each region. The percentage increase per year is then calculated. As stated previously, Unitywater has assumed that the growth for 'Materials and Services ISD' is 50% of the demand growth.

The discrepancies that SKM has identified are:

- Extrapolation of per capita demand differs between the two regions. The Moreton Bay Regional Council region reaches the 200 litre per head per day target in 2016-17 whereas the Sunshine Coast Regional Council region reaches this target in 2013-14. Furthermore the extrapolation of the per capita flow for Moreton Bay Regional Council region is not linear. No explanation or evidence has been provided with which to assess why there are different approaches or what the basis is of the non-linear increase in per capita flow. The increase has been calculated as greater than a linear increase for Moreton Bay Regional Council region.
- Unitywater provides figures for the total water demand for the two regions. Unitywater's figures differ to the values SKM has calculated even excluding the differences in per capita demand. SKM notes that Unitywater records the following comment against the line "Nathan to provide new numbers".

- No explanation has been provided as to why the growth factor for the 'Other Materials and Services ISD' has been applied as 50% of the demand growth figure or why the 'Materials and Services Other' item has zero growth.
- As the two previous discrepancies influence the demand growth figure then the validity of the growth factor for the 'Other Materials and Services ISD' item is also questioned.

Table 53 details the growth indices provided in the *Cost Escalation and Growth Indices* spreadsheet for the two Other Materials and Services items discussed above and, for comparison, the percentage differences in annual expenditure calculated from the Information Template data by SKM.

Table 53 : Annual Growth Indices and Expenditure Percentage Differences

Item	2013-14 (Percentage Change)	2014-15 (Percentage Change)
Materials and Services ISD	3.7	2.5
Materials and Services Other	0.0	0.0
Information Template 2013-15 Submission increase in expenditure	0.9	3.3

The percentages details in Table 53 infer that additional factors to growth indices influence the calculated increase in Other Materials and Services expenditure.

SKM's calculations, using the provided data, result in the growth indices noted in Table 54. For comparison, SKM has used the same formula as Unitywater when calculating the annual increase in Materials and Services ISD ie 50% of Total Water Demand increase.

Table 54 : Unitywater & SKM Growth Indices Comparison

Item	2013-14 (Percentage Change)	2014-15 (Percentage Change)
Total Water Demand Increase (Unitywater)	7.29	5.01
Total Water Demand Increase (SKM)	6.12	5.96
Difference	**1.17**	**-0.95**
Materials and Services ISD (Unitywater)	3.65	2.50
Materials and Services ISD (SKM)	3.06	2.98
Difference	**0.59**	**-0.48**

The figures in Table 54 indicate that Unitywater has overestimated the increase in Materials and Services ISD in 2013-14 by 0.59% and underestimated the expenditure for 2014-15 by 0.48%. This assessment assumes that the increase in Materials and Services ISD is 50% of the Total Water Demand increase, which has not been accepted by SKM due to a lack of information.

Using the CPI figures in the *Cost Escalation and Growth Indices* spreadsheet in addition to the growth indices detailed previously SKM has calculated the regulated expenditure. SKM has used the adjusted total operating cost for 2012-13 of $11.13 M[64] as the base year. This data was provided by Unitywater in the response to the draft review of this report and is discussed in more detail in Section 4.9.5.

Table 55 : Comparison of Unitywater's adjusted costs versus SKM's determination

Item	2012-13	2013-14	2014-15
Expenditure (Unitywater)	$11.13 M[31]	$11.07 M[31]	$11.44 M[31]
Increase	-	-0.5%	3.3%

[64] Attachment 3 – Opex management response, Unitywater, P15.

Item	2012-13	2013-14	2014-15
Expenditure (SKM)	$11.13 M	$11.75 M	$12.39 M
Escalation (SKM)	-	5.6%	5.5%
Difference in expenditure (Unitywater – SKM)	-	-$0.68 M	-$0.95 M

The values shown in Table 55 support the view that the expenditure on Other Materials and Services is efficient.

4.9.4.2 Delivery of service

Due to the various materials and services the delivery of Other Materials and Services is completed by both in-house and external parties.

Details of the number of FTEs involved in the delivery of Other Materials and Services has not been provided.

SKM was informed that different approaches have been applied to the delivery of some of the items comprising the Other Materials and Services category. These include:

- Competitive tenders were obtained for delivery of 'pipes and fittings' that has resulted in a saving of 18%
- The number of providers delivering facilities management have been reduced from 26 has resulted in a saving of $850,000 to around $2.1 million
- A revised approach has been undertaken to external hired fleet, which is now managed at Branch Manager level in order to control the expenditure

These and other savings have been recorded in the Procurement Savings Register, which records savings costs. Unitywater stated that the aim is to update this and use the register to record savings avoided too. The different approaches taken indicate that Unitywater is seeking more efficient ways to deliver the items comprising the Other Materials and Services category.

4.9.4.3 Market conditions

No specific information has been provided with which to assess the market conditions for Other Materials and Services. Unitywater have stated that:

> *"Market conditions for other materials and services are routinely and robustly analysed and assessed as part of the business's broader approach to procurement management."*

As previously stated SKM considers that Unitywater's procurement policies and procedures are in accordance with good industry practice and are robust. This is likely to result in a fair market value for that item being realised.

4.9.4.4 Efficiencies and economies of scale

Efficiencies are being realised in a revised approach to procurement as previously detailed. In the *2013/14 Budget Target and Principles Memorandum* Unitywater make the following statement that detailed their approach to securing efficiencies through procurement.

> *"Procurement will take a proactive approach to support Divisions in evaluating supplier costs and reducing the costs of materials and contracted services where possible. There is an objective for all future contract negotiations to look to deliver a 5% saving on current price levels."*

As previously stated, Unitywater has provided details of new approaches to delivering some of the items that fall under the Other Materials and Services category. The items include 'pipes and fittings', facilities management and external hired fleet. The savings from these will be realised over the course of the revised contracts.

Unitywater detailed that a new approach has been undertaken to procurement with savings being recorded in the Procurement Savings Register. It is assumed that this approach has been completed for all new contracts and so will result in efficient expenditure.

4.9.4.5 Benchmarking

In the response to RFI UW 007-013 Unitywater stated that no internal benchmarking has been undertaken.

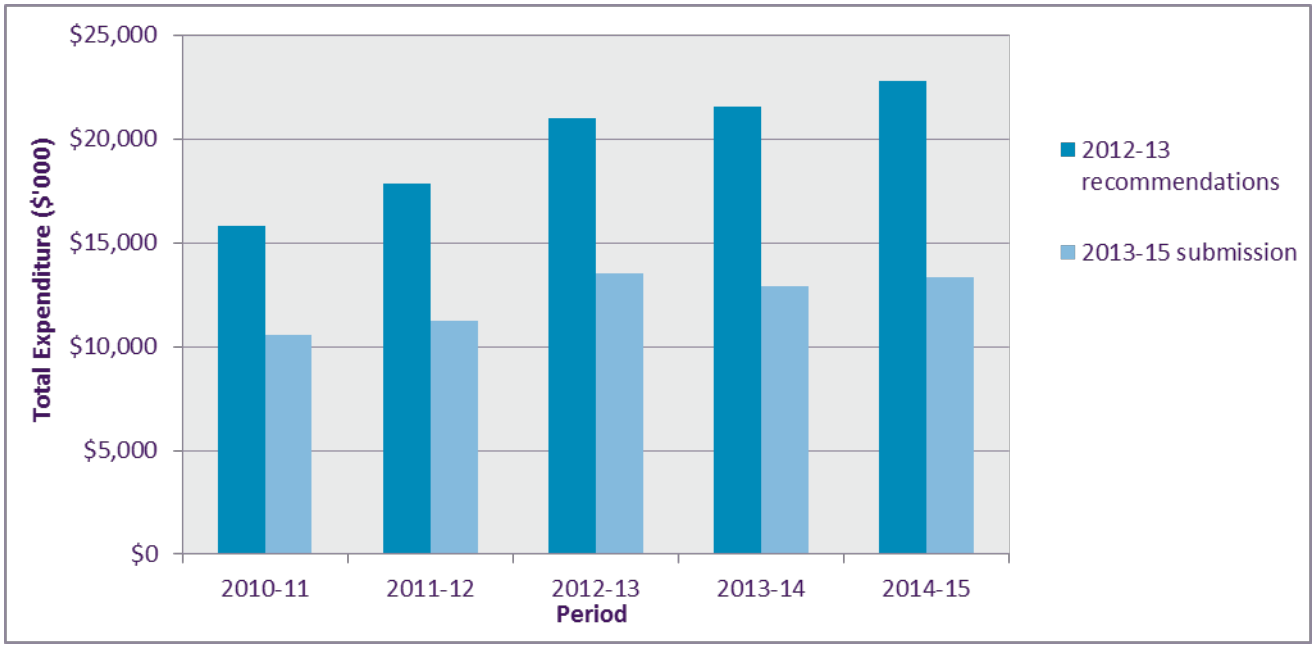
SKM understands that the expenditure is linked to the Unitywater's asset management program and is therefore based on the following factors water demand, number of plants and length of network.

4.9.5 Comparison against saving targets

SKM has compared the entities 2012-13 recommendation and 2013-15 submission, which is presented in Figure 4-22. The graph shows a marked decrease in expenditure in the 2013-15 submission including for historical expenditure. For 2013-14 the decrease is $8.6 million and for 2014-15 $9.5 million.

No explanation has been provided for these decreases in expenditure. SKM was informed that a new approach has been taken to calculating the Information Template data. This may mean that the costs previously assigned to Other Materials and Services could have been assigned to other cost categories. Further information is required to confirm the progress Unitywater has made against the savings targets.

Figure 4-22 : Comparison of 2012-13 Submission and 2013-15 Submission



No details have been provided with which to confirm if the $2.2 million annual savings identified by Halcrow have been realised in the forecasts for 2013-14 and 2014-15.

Unitywater have stated that "Unitywater consider that the $2.2 million efficiency gain recommended in the 2012-13 Price Monitoring Review has been achieved".[65]

The evidence provided to support this view is as follows:

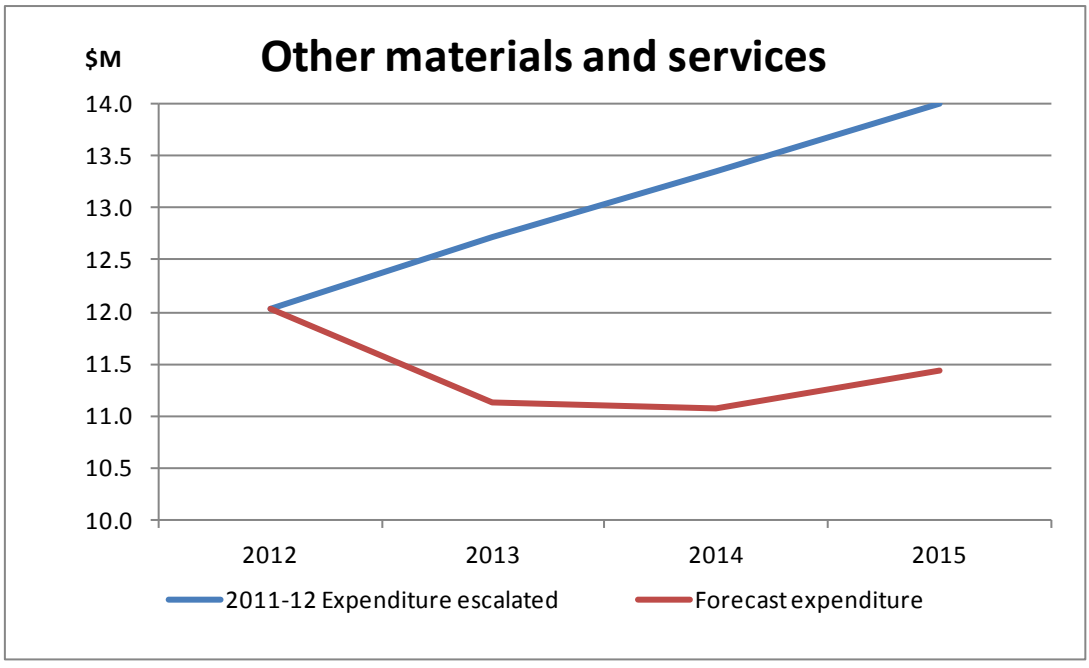
[65] Unitywater, *Attachment 3 – Opex management response*, P16

"It should be noted that, due to a change in accounting classifications between 2012-13 and 2013-14, $2.5 million of expenditure that was reported as contracted services in 2012-13 (and included outsourced repairs and maintenance) has been reclassified as Other Materials and Services from 2013-14 onwards.

"The last two lines of the table below shows the yearly movements in regulated other materials and services on a comparable basis."

		2011	2012	2013	2014	2015
Other materials and services (not relating to capital expenditure)						
Drinking water	$'000	3,555.3	3,206.0	3,133.7	2,905.3	3,002.0
Other core water services	$'000	127.6	138.8	208.1	102.1	105.5
Wastewater via sewer	$'000	5,741.9	6,110.2	7,687.2	8,014.6	8,281.5
Trade waste	$'000	63.2	80.6	103.6	51.4	53.1
subtotal regulated services	***$'000***	9,488.0	9,535.6	11,132.7	11,073.4	11,442.2
Non-Regulated	**$'000**	1,059.5	1,717.5	2,369.9	1,831.1	1,892.1
Total Operating Costs Attributable to Other materials and servi	**$'000**	**10,547.5**	**11,253.2**	**13,502.6**	**12,904.5**	**13,334.3**
Growth in regulated services			0.5%	16.7%	-0.5%	3.3%
Reclassification of costs from contracted services	$'000	2,500.0	2,500.0			
Adjusted Total Operating Costs Attributable to Other materials	**$'000**	**11,988.0**	**12,035.6**	**11,132.7**	**11,073.4**	**11,442.2**
Adjusted growth in regulated services			0.4%	-7.5%	-0.5%	3.3%

"The graph below considers the variance between 2011-12 Other Materials and Services expenditure escalated using Unitywater's cost escalation and growth indices in relation to forecast expenditure."



SKM has reviewed these details and make the following comments:

- The year that the change has occurred appears to be in 2012-13 due to the $2.37 million increase in expenditure (16.7%). SKM has assumed that 2012-13 is the year that the change occurred.
- The graph shows approximate savings from the escalated expenditure figures of $1.6 million in 2012-13, $2.3 million in 2013-14 and $2.6 million in 2014-15.
- SKM has calculated the escalated expenditure by scaling from the graph as the calculations have not been provided. The graphs details escalations of about 6.0% for 2012-13, 5.1% in 2013-14 and 5.0% in 2014/15. The bases of these figures are unknown. SKM have been unable to verify them with the data in the Cost Escalation and Growth Indices spreadsheet. As previously mentioned the validity of the cost escalation factors has not been confirmed.

- In order to understand the results of the graph SKM has calculated cost escalation factors using the CPI data in the Cost Escalation and Growth Indices spreadsheet and SKM's calculated growth factors. SKM have calculated cost escalation factors greater than those calculated from the graph. These are 6.4% for 2012-13, 5.6% in 2013-14 and 5.5% in 2014-15. Assuming that these cost escalation factors are correct then the savings of $1.68 million in 2012-13, $2.45 in 2013-14 and $2.82 million in 2014-15 will be realised.

SKM is of the opinion that Unitywater have delivered the $2.2 million savings.

4.9.6 Summary

Unitywater has demonstrated that the expenditure is required to fulfil the asset management plans in order to deliver the regulated services.

The project is assessed as prudent.

SKM has not been provided with details of the breakdown of costs that prevents assessment of the cost calculation. SKM has identified discrepancies with the calculation of the growth indices that would have to be explained prior to SKM accepting the growth indices.

SKM is of the opinion that Unitywater's approach to procurement of the services follows good industry practice.

SKM have identified discrepancies with the calculation of costs notwithstanding these factors SKM has demonstrated that the expenditure has been under reported.

The expenditure has been assessed as efficient.

The figures provided demonstrate good progress against the savings targets, however as historical data has been adjusted and as SKM was informed that a new approach has been undertaken when assigning costs then it could be that the 'savings' represent costs assigned to other categories. For example SKM notes a large increase in the Corporate Costs category.

Table 56 below identifies the revised operating expenditure for Other Materials and Services (excluding non-regulated services).

Table 56 : Other Materials and Services revised operating expenditure

Source	2010-11	2011-12	2012-13	2013-14	2014-15
Information Template	-	9.5	11.1	11.1	11.4
Revised forecast	-	-	-	11.1	11.4

4.10 Summary assessment of operational expenditure

SKM noted that Unitywater has undertaken a number of major initiatives in recent years to reform its operations and reduce its operational expenditure costs. The staggering of shifts and the introduction of a shift between 1 pm and 10 pm to minimise emergency maintenance costs, and reforms in procurement practices for electricity, materials and services have realised some efficiency gains. On-going programs such as the rationalisation of critical spare holdings and the number of depots from 6 to 2, and the use of more energy efficient assets will be expected to achieve further cost savings.

Unitywater has moved to a more planned maintenance arrangement, but as yet, there are no reduced allocations included in the 2013-14 forecast to reflect savings from reduced responsive work, other than through the rearrangement of the shifts for the field services staff.

With these workplace reforms having been undertaken, allowance for some efficiency gain could be expected to be apparent in the 2013-14 forecast. SKM has concerns that these gains have not been included, nor have the recommended savings from the 2012-13 price monitoring review been realised.

The 2012-13 price monitoring review examined a business case[66] for a Consolidated Asset Management System and highlighted that the current level of field services operations is classed as "basic". These operations include travel time, idle time, personal and lunch breaks, retrieving materials and on-job work, and the focus of the business case was to improve on-job utilisation through changes in work practices. Halcrow in their analysis concluded that the anticipated gains from this program were approximately 5% per annum as field operation productivity improved. SKM noted that the proposed reduction in the 2012-13 price monitoring review was not apparent in the Employee Expenses allocation for 2013-14, and therefore SKM considered it appropriate to apply the same efficiency reduction for 2013-14.

The asset management system that Unitywater currently has in place was reviewed as part of a WSAA study and found to be reasonable, but below the general water industry average across a range of activities. Unitywater has developed an improvement plan targeting good industry practices for all asset management activities by 2016-17. SKM considers it imperative that Unitywater continues to develop and improve this asset management system to achieve long-term efficiencies, particularly with the move to a 70% planned 30% responsive maintenance balance. An enhanced asset management system will support the efficient use of the workforce, both internal and contract, and will more fully achieve the efficiency gains from the revised work arrangements, and improved procurement policies and procedures.

In its pricing submission, Unitywater highlighted that there are *"… $8.5M efficiency savings included in 2013-14 controllable costs:*

- *increasing efficiency in the management and utilisation of staff*
- *procurement savings via focus on vendor contract negotiations for items such as biosolid removal, chemicals, pipes and fittings and fleet*
- *accommodation rationalisation*
- *ICT rationalisation*
- *decreasing reliance on Council services."*[67]

In response to a SKM request, Unitywater provided papers detailing a 2013-14 budget analysis which illustrated savings and cost movements across various cost categories, but did not include a summary of the aggregated savings, or the contribution of each of the controllable costs identified above to the $8.5M efficiency savings in the 2013-14 forecast.

4.10.1 Recommended adjustments to operational expenditure

The following reductions to the 2013-14 and 2014-15 forecasts are recommended:

- Corporate Costs - reduction of $5.031 million in 2013-14 and $5.803 million in 2014-15 through a reduction of FTEs across corporate functions
- Employee Expenses - a proposed reduction of $1.32 million in 2013-14 due to anticipated gains from improvements in Field Services operations, and $1.361 million in 2014-15 (which is equivalent to the proposed 2013-14 reduction escalated by 3.1% in line with the escalation of employee expenses between 2013-14 and 2014-15)
- Electricity - a proposed reduction of $0.72 million in 2013-14 in line with the recommended saving from the 2012-13 price monitoring review, and $0.785 million in 2014-15 (which is equivalent to the proposed 2013-14 reduction escalated by 9% in line with the cost escalation between 2013-14 and 2014-15)
- Other Materials and Services - no proposed reduction in 2013-14 or 2014-15

[66] Halcrow, *SEQ Water and Wastewater Price Monitoring 2012-13: Unitywater*, section 5.3.2.7, p. 56, January 2013
[67] Unitywater, *Price Monitoring Submission: 2013-15*, section 10, p. 43

Table 57 Summary of reductions to 2013-14 operating expenditure forecast (values in nominal $'000s)

Category	2013-15 submission	Recommended reduction	Revised 2013-14 budget	Variance
Corporate Costs	53,245	5,031	48,214	-9.5%
Employee Expenses	56,113	1,320	54,793	-2.4%
Electricity	9,866	720	9,146	-7.3%
Other Materials and Services	11,073	0	11,073	0.0%
Total 2013-14 forecast[68]	149,853	7,071	142,782	-4.7%

Table 58 Summary of reductions to 2014-15 operating expenditure forecast (values in nominal $'000s)

Category	2013-15 submission	Recommended reduction	Revised 2013-14 budget	Variance
Corporate Costs	49,019	5,803	43,216	-11.8%
Employee Expenses	57,907	1,361	56,546	-2.4%
Electricity	10,493	785	9,708	-7.5%
Other Materials and Services	11,442	0	11,442	0.0%
Total 2014-15 forecast[69]	149,235	7,949	141,286	-5.3%

[68] There are other categories included in the total 2013/14 forecast, and therefore these values are not the summation of the individual categories shown

[69] There are other categories included in the total 2014/15 forecast, and therefore these values are not the summation of the individual categories shown

5. Capital expenditure

This section contains a review of prudency and efficiency of Unitywater's proposed capital expenditure for the 2013-15 financial year. The section includes the following sub-sections:

- Overview of Unitywater's capital expenditure for 2013-15
- The Authority's sample selection
- Overview of prudency and efficiency of capital expenditure
- Summary prudency and efficiency reviews of the each selected sample
- Summary and recommendations

5.1 Overview of capital expenditure

The Authority required that to assess the prudency of capital expenditure, Unitywater must attribute one or more of the following drivers to the capital expenditure projects submitted:

- **Growth** – capital expenditure designed to provide an increase in the capacity or capability of an asset or construction of new assets in response to increased demand, growth or variations required by a customer. Capital expenditure to provide increased security of supply should be included in growth
- **Renewals** – capital expenditure associated with the replacement and or enhancement of an asset that currently meets service performance standards and legislative requirements but faces an unacceptable risk of future non-compliance. The renewal will maintain existing levels of service over the life cycle of the asset
- **Improvements** – capital expenditure associated with upgrading service outcomes to improve asset efficiency, reliability or increase the anticipated life of an asset to prevent service non-compliance or capacity shortfall. It must achieve an increase in the reliability of the quality of supply that is explicitly endorsed or desired by customers, external agencies or participating councils
- **Compliance** – capital expenditure associated with the replacement and or enhancement of an asset to prevent a non-compliance with legislative requirements such as (but not limited to) the Water Act, South-East Queensland Water (Distribution and Retail Restructuring) Act, Water Supply (Safety and Reliability) Act and OH&S

However, Unitywater has submitted some projects which have been classed under other cost drivers. The non-conforming cost drivers are:

- Business efficiency
- Disposals
- Infrastructure efficiency
- NA – Not Applicable

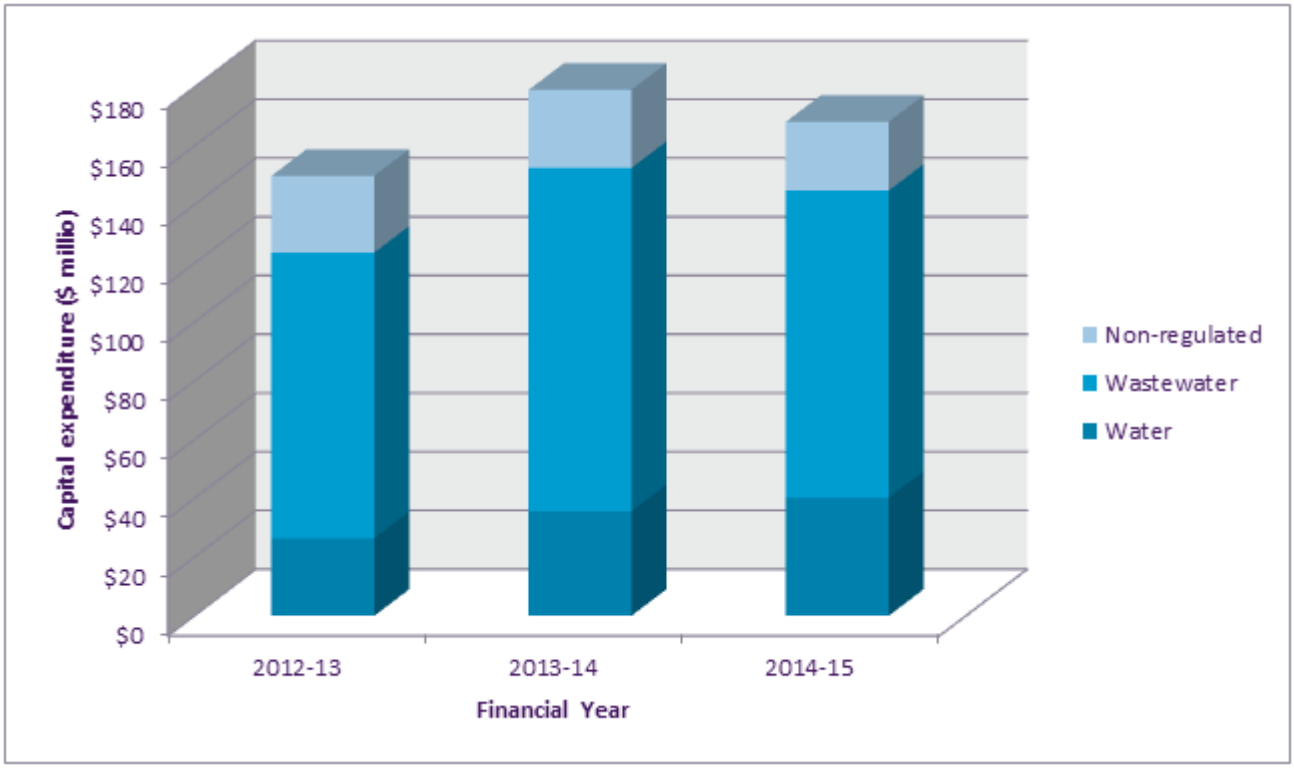
Unitywater has reported capital expenditure of $297.3 million budgeted expenditure in the two years to the end of the financial year 2014-15, excluding non-regulated expenditure items.

Table 59 : Capital expenditure, capitalised by service (including developer provided assets) ($ M) (Unitywater, 28 June 2013)

Expenditure	2012-13	2013-14	2014-15	2013-14 to 2014-15 Total
Water	26.4	35.6	40.2	**75.8**
Wastewater	97.3	116.9	104.6	**221.5**
Non-regulated	26.1	26.6	23.4	**50.1**
Total Capitalised	**149.8**	**179.1**	**168.2**	**347.3**

The breakdown of costs of budgeted expenditure for the 2012-13 to 2014-15 financial year budgets can be seen in Figure 5-1.

Figure 5-1 : Forecast capital expenditure for 2013-14 and 2014-15 by category (Unitywater, 28 June 2013)



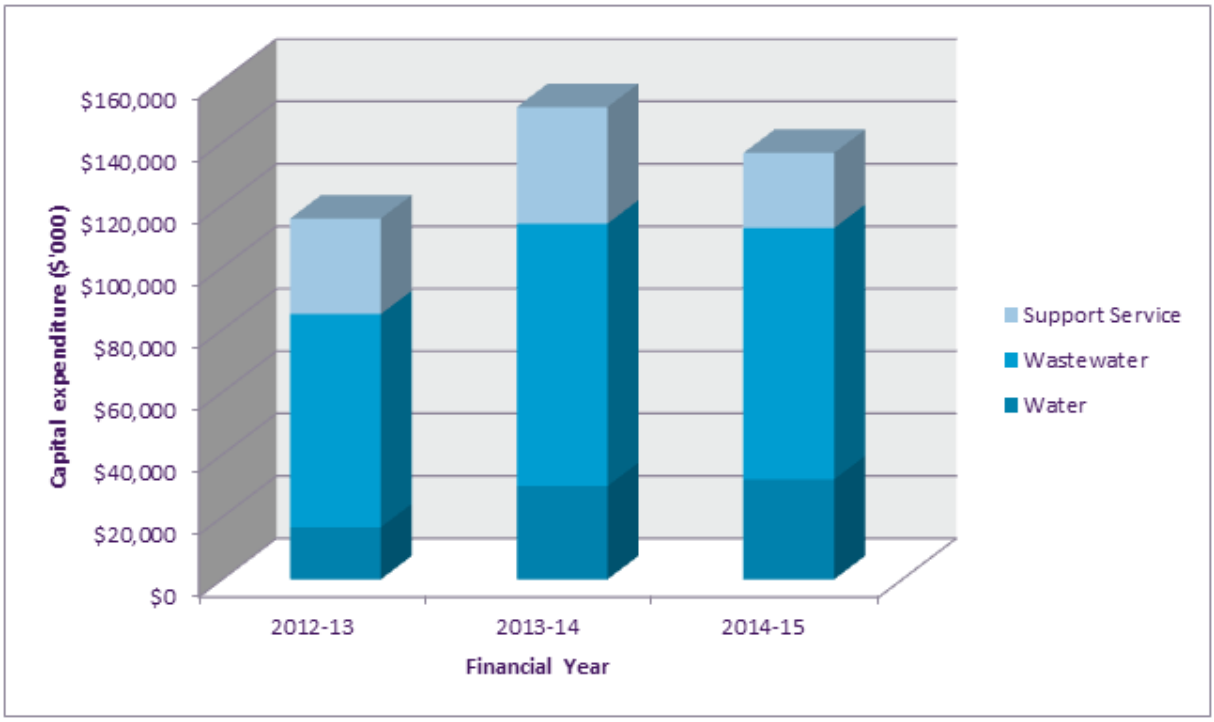
The total expenditure included in the QCA Templates - UW 2013-15 Regulatory Submission Spreadsheet (Unitywater, 2013) does not align exactly with that include in the Unitywater submission. Unitywater suggests the supporting templates are more accurate.

The expenditure by service, excluding non-regulated expenditure, is included below in Table 60.

Table 60 : Capital expenditure, capitalised by service ($'000) (Unitywater, 28 June 2013)

Expenditure	2012-13	2013-14	2014-15	2013-14 to 2014-15 Total
Water	16,686	29,877	32,037	**61,914**
Wastewater	68,328	84,141	80,559	**164,700**
Support Service	30,660	37,368	24,071	**61,439**
Total	**115,673**	**151,386**	**136,668**	**288,053**

Figure 5-2 : Capital expenditure, capitalised by service ($'000) (Unitywater, 28 June 2013)



Review of the expenditure by region and product reveals that:

- The majority (57%) of expenditure for 2013-15 is incurred in respect of sewerage assets; with water and support services accounting for a further 21% each
- This this split of expenditure is very similar for both 2013-14 and 2014-15 individually

Unitywater states that "*the significant capital expenditure for sewage services is a result of the following factors:*

- Major upgrades of some STP upgrades often require reissuance of licence incremental new load. As such reconfiguration of STP design and functionality to meet current licence conditions for all loads is a considerable driver of capital expenditure; and
- Deferral of investment in water and business water consumption, with much of this attributable to water restrictions and government initiatives regarding demand".

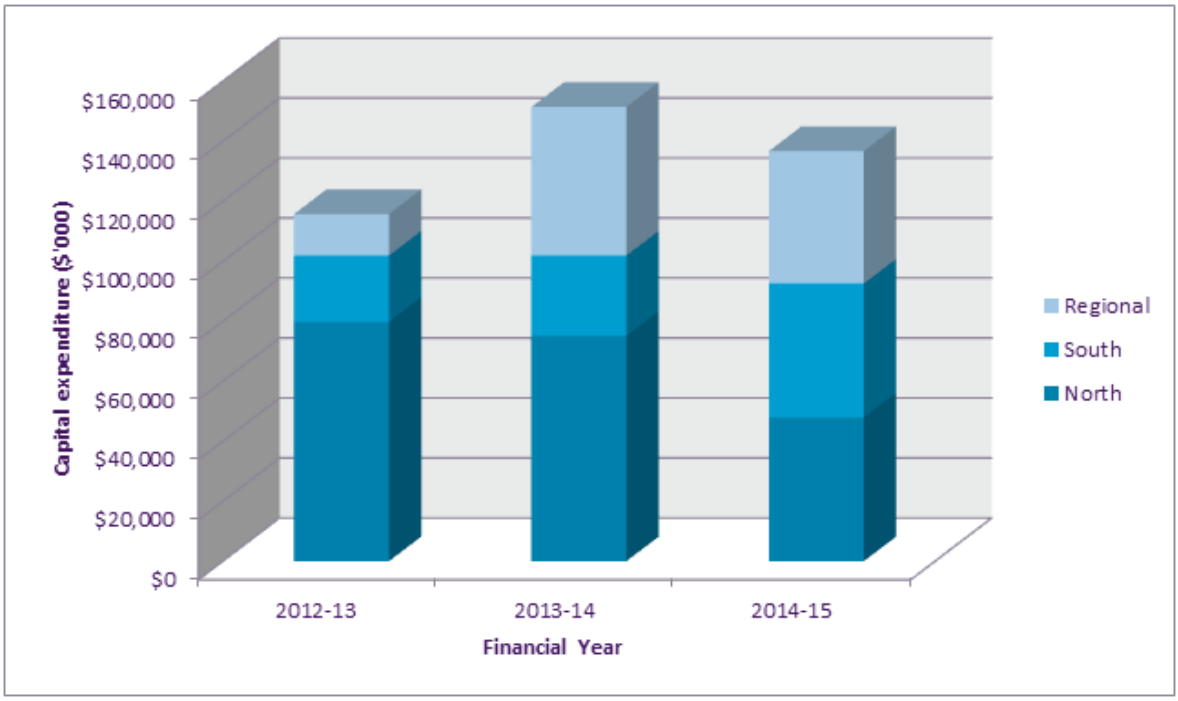
SKM acknowledges that the upgrade of STPs to meet growth will often require a revised licence to be obtained, often with more stringent water treatment requirements.

The expenditure by region, excluding non-regulated expenditure, is included below in Table 61.

Table 61 : Capital expenditure, capitalised by region ($'000) (Unitywater, 28 June 2013)

Expenditure	2012-13	2013-14	2014-15	2013-14 to 2014-15 Total
North	79,798	75,070	47,894	**122,964**
South	22,055	26,792	44,622	**71,415**
Regional	13,819	49,523	44,151	**93,675**
Total	**115,673**	**151,386**	**136,668**	**288,053**

Figure 5-3 : Capital expenditure, capitalised by region ($'000) (Unitywater, 28 June 2013)



Review of the expenditure by region and product reveals that:

- Approximately 43% of total capital expenditure for 2013-15 is incurred in the North (Sunshine Coast) region, with a further 25% in the South (Moreton Bay) region and the remaining 33% regional
- The allocation of expenditure by region in 2013-14 is more focussed in the North region, with approximately 50% of total forecast with 18% in the South region and the remaining 33% regional; whereas in 2014-15 the distribution of the expenditure is relatively equal (35% for the North region, 33% for the South region and 32% regionally)

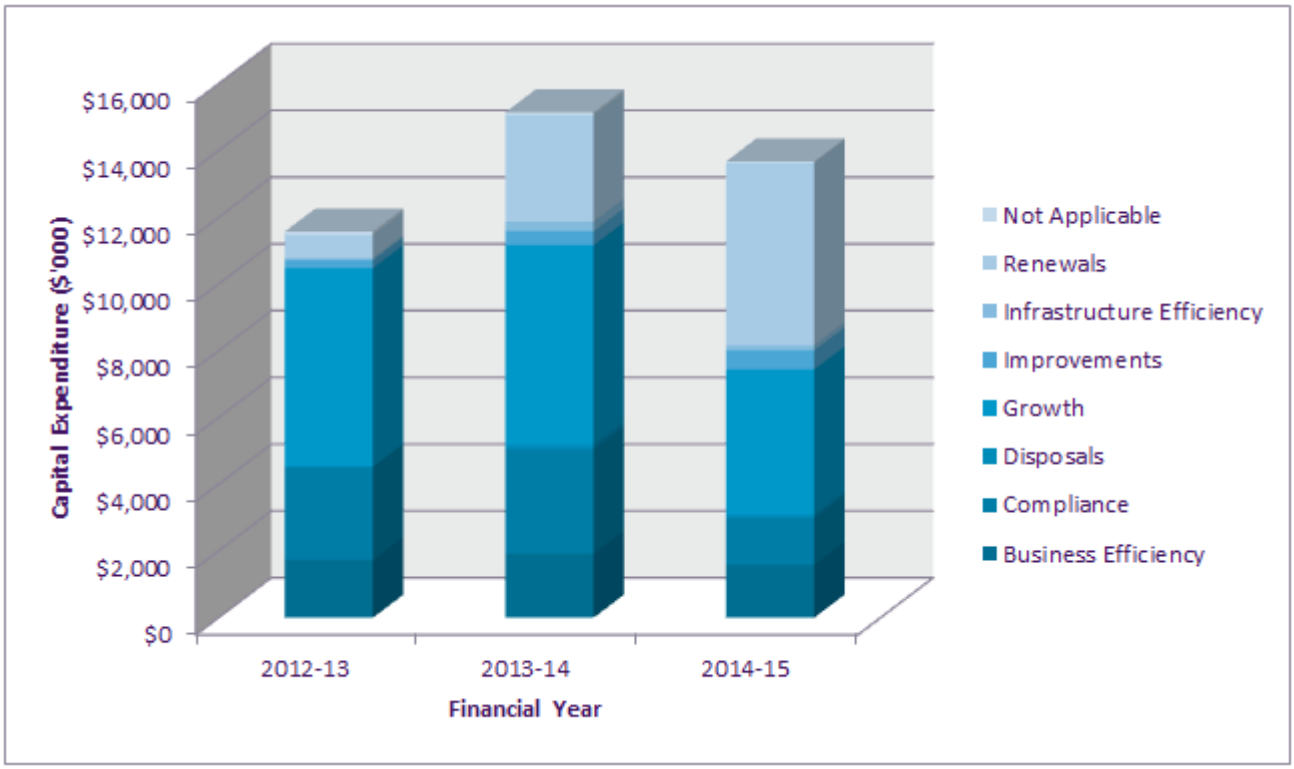
Unitywater states that "*historical under-investment in critical infrastructure, particularly on the Sunshine Coast, has forced Unitywater to invest significant funds to comply with environmental licences and support population growth".*

The allocation of capital expenditure incurred in relation to each of the drivers is shown in Table 62.

Table 62 : Capital expenditure, capitalised by driver ($'000) (Unitywater, 28 June 2013)

Expenditure	2012-13	2013-14	2014-15	2013-14 to 2014-15 Total
Business Efficiency	1,724	1,904	1,579	**3,483**
Compliance	2,791	3,140	1,408	**4,548**
Disposals	6	120	100	**220**
Growth	5,950	5,992	4,347	**10,340**
Improvements	242	418	572	**990**
Infrastructure Efficiency	62	291	153	**444**
Renewals	692	3,185	5,458	**8,643**
Not Applicable	100	88	50	**138**
Total	**11,567**	**15,139**	**13,667**	**28,805**

Table 63 : Capital expenditure, capitalised by driver ($'000) (Unitywater, 28 June 2013)



Unitywater states that *"capital expenditure projects are mapped to QCA specified price monitoring cost drivers of growth, compliance renewal and service improvement. Unitywater maps projects on a one project one driver basis, we are considering development of multiple drivers mapping per project. Apportionment methods are not straightforward and require application of engineering opinion, the test is being able to obtain reliably repeatable outcomes from the process*".

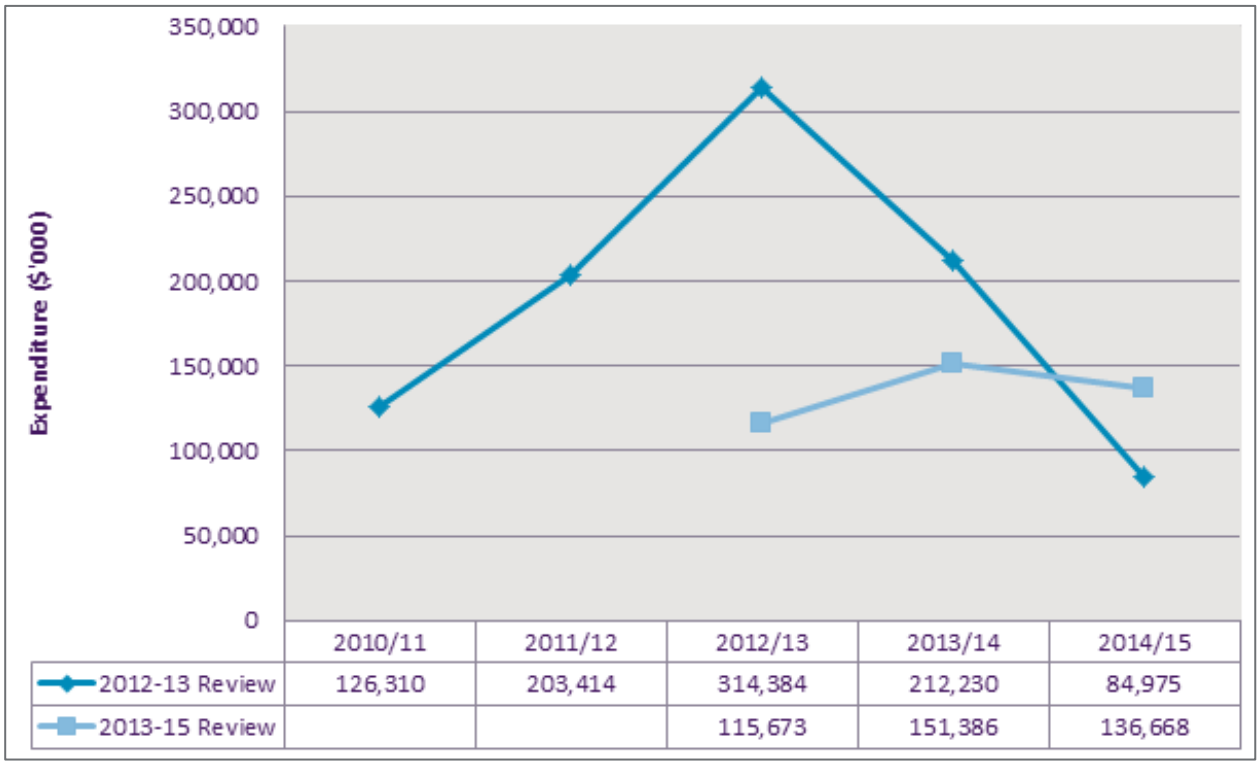
Review of the expenditure by region and product reveals that:

- Expenditure in 2013-14 principally driven by growth (40%) with renewal and compliance in equal proportions (21% each); business efficiency accounting for 13%, improvement 3%; and disposals, infrastructure efficiency, not applicable all accounting for approximately 1 to 2% each
- For 2014-15 the predominate driver is renewal (40%) followed by growth (32%) with business efficiency, compliance and improvement accounting 12%, 10% and 4% respectively; and disposals, infrastructure efficiency, not applicable all accounting for less than 1% each
- Of Unitywater's drivers which differ from the Authority's, it is noted that disposals, infrastructure efficiency and not applicable together only account for a maximum of 3% of the expenditure for any year

5.2 Historical delivery

The expenditure over the five year reported period reviewed by the Authority was compared to those submitted by Unitywater for 2012-13 to 2014-15, as shown in Figure 5-4.

Figure 5-4 : Comparison of five year reported expenditure ($000s)



	2010/11	2011/12	2012/13	2013/14	2014/15
2012-13 Review	126,310	203,414	314,384	212,230	84,975
2013-15 Review			115,673	151,386	136,668

Unitywater's states that "*the capital expenditure forecast provided in the 2012-13 submission varies from forecast data provided in this submission. This can be attributed to various factors including but not limited to:*

- Unitywater efforts to optimise capital forecasts and innovative lower cost capital options as opposed to relying on council estimations of future capital requirements
- Unitywater gaining more information on assets condition and performance
- Unitywater undertook a market engagement exercise through a public tender for the supply of pipe and associated fittings. Based on expected expenditure for pipes and associated fittings and prices being charged prior to the market engagement exercise, Unitywater will achieve savings of the order of 18%. There are additional incentives for further price reductions through volume ordering and delivery
- Unitywater having the benefit of operational information to obtain a greater understanding of its area and the business's capital needs, resulting in expenditure and network requirements
- Unitywater achieving efficiencies and sourcing alternatives to expenditure than previously forecast by the individual councils (as evidenced by the Brendale STP capital expenditure deferral by pumping sewage into QUU's network for treatment)
- The capital justification process put in place to justify needs, options, scope and delivery of major projects"

SKM notes that accounting for the decrease in capital expenditure of $198.7 million in 2012-13, $60.8 million in 2013-14 and the increase in capital expenditure of $51.7 million in 2014-15, there is a net decrease in capital expenditure of $207.8 million.

5.3 Sample selection

A sample capital expenditure projects and programs for detailed analysis and review was selected by the Authority. This sample was discussed and agreed during the Project Kick-off Meeting on 2 July 2013.

The capital expenditure projects and programs chosen for review are shown below in Table 64.

Table 64 : Capital expenditure programs reviewed ($000s, as incurred) (Unitywater, 2013)

Project Number	Project Name	Driver	Previous years	2013-14	2014-15	Total (2013-2015)
C0028	Maleny STP Upgrade	Compliance	4,668	10,776	679	11,455
C0399	Suncoast Sewerage Scheme Transfer System	Growth	3,741	5,762	-	5,762
C0886	Coolum STP Upgrade, inlet works	Growth	1,198	5,525	-	5,525
C1279	Northern Services Centre Construction	Business Efficiency	0.5	3,970	-	3,970
C9089	SCADA Improvement and Integration Program	Improvements	7,347	12,572	3,572	16,144
C9993	Fleet - Trucks	Business Efficiency	759	4,862	3,880	8,742
Total Sample (6 Projects)			**17,714**	**43,467**	**8,131**	**51,598**

5.4 Commissioning model summary

Table below provides a summary of Unitywater's Commissioning Model's values for "as incurred" and "as commissioned" expenditure for the sample projects selection. The "as commissioned" values were calculated by adding the "budgeted expense" values, "OCAM" values and the "budgeted interest cap." values given in Unitywater's regulatory submission.

Table 65 : Commissioning Model Summary for Sample Projects Selection (Unitywater, 2013)

Project	2013-15 As Incurred Expenditure ($)	Total As Incurred Expenditure ($)	2013-15 As Commissioned Expenditure ($)	Total As Commissioned Expenditure ($)
C0028 Maleny STP Upgrade	11,454,924	16,317,898	14,228,829	19,289,448
C0399 Suncoast Sewerage Scheme Transfer System	5,761,523	9,502,884	7,009,836	10,751,197
C0886 Coolum STP Upgrade, inlet works	5,524,925	6,722,777	6,598,099	7,795,951
C1279 Northern Services Centre Construction	3,970,000	3,970,500	4,829,312	4,829,812
C9089 SCADA Improvement and Integration Program	16,144,148	23,491,050	20,078,346	28,025,262
C9993 Fleet - Trucks	8,742,275	14,361,052	8,742,275	14,361,052

5.5 Detailed investigations

The findings of the detailed investigations for each of the projects or programs reviewed are summarised in the following sections. More detailed discussion in respect of each project is presented in Appendix A to Appendix F.

5.5.1 Maleny Sewage Treatment Plant upgrade

The existing Maleny Sewage Treatment Plant (STP) has been in operation since 1982 and is at its hydraulic capacity. The planned upgrade will increase the capacity to cater for growth in the area up until 2031.

As part of the upgrade, Unitywater will be developing a reforestation and wetlands area within the Maleny Community Precinct. Treated water from the Maleny STP will receive additional treatment through the forest and wetland system before entering Obi Obi Creek.

The Maleny STP is being replaced with a Membrane Biological Reactor process. A land disposal system (forest and wetland) is also being installed to complete the treatment train for Maleny STP.

The upgrade of the Maleny STP is considered prudent on the basis that the plant is currently under capacity and requires upgrade to meet current and future population projections.

SKM is satisfied that a range of options were adequately selected and reviewed and that the scope of works is appropriate to meet the project need. Whilst the use of recycled water for the local golf course and nurseries was identified, SKM agrees with Unitywater's conclusion that the recycled water market is challenging, with users only wanting very low cost water periodically.

Based on the tender process selected for both the wetlands and treatment plant components of the project, and the negotiation and assessment undertaken, SKM finds that the project costs for these are in line with market conditions.

In summary, SKM finds that the project is prudent and efficient.

5.5.2 Suncoast sewerage scheme transfer system

The Suncoast STP is located on Finland Road, Pacific Paradise, on the western side of the Sunshine Motorway. Treated effluent from the plant is discharged to the Maroochy River.

Augmentation of the sewage treatment system was needed in order to cater for population growth. The required augmentation of the Suncoast STP coincides with the need to also augment the Coolum STP (approximately 6 km to the north). Various options were identified and assessed considering linking both treatment plants and linking also with the Maroochydore STP (which has spare capacity). The selected option was to mothball the Suncoast STP. The Suncoast STP Sewerage Transfer System will transfer the sewerage collected in the Suncoast catchment to the Maroochydore STP for treatment.

The project involves transfer of all Suncoast STP flows via a new transfer pumping station to Maroochydore STP via a 6.1 km pipeline, nominally DN560 HDPE pipe with an 820 m Horizontal Directional Drill (HDD) section under the Maroochydore River. The Suncoast STP will be abandoned with the existing tanks used for emergency storage.

Based on the adopted population projections, the Suncoast STP is currently under capacity and so an augmentation or transfer of loadings is required to meet current and future population projections.

SKM is satisfied that an appropriate range of options was selected and adequately reviewed. As such, the scope of works is appropriate to meet the project need.

The project is to be delivered in four key parts. SKM accepts the use of a specialised contractor for the HDD portion of the works and notes the time constraints of traversing the sporting field. SKM also supports the construction of pipeline across the cane fields in the "dry season". In addition, SKM notes there have been attempts to package works, such as the procurement of the pipe and bundling construction with other works. However, SKM still has concerns that the rising main has been built prior to the finalisation of the design of the pump station and believes that there may have been efficiencies in packaging the construction of the pipework north of the river with the construction of the pump station.

SKM is satisfied with the robust tendering processes for the procurement of HDD services and pipework and fittings. The costs for the works completed in-house by Unitywater have been reviewed and have found to be low and are therefore efficient. In addition, the cost estimates for the currently tendered works and the pump station provided by Unitywater have been reviewed and are found to be efficient.

It is noted that the design costs and the project management costs for this project are particularly high, whilst this project has a number of particular technical challenges, including a long directional drill under the Maroochy River. SKM recommends a reduction in costs to bring the costs in line with Unitywater's revised Capital Works Planning Manual.

The current project costs have been revised following the production of the budget. SKM recommends the revised forecast cost of approximately $10.93 million be incorporated into the Authority's cost model for the overall project (a reduction of approximately $0.41 million from the August 2013 Final Forecast Cost).

As SKM's estimated value of remaining work is higher than the value originally submitted by Unitywater, SKM suggests that the lower number be adopted until Unitywater's revised templates are submitted.

In summary, SKM finds that the project is prudent but only partially efficient.

5.5.3 Coolum STP upgrade, inlet works

The upgrade of the Coolum STP inlet works is required to reduce the number of licence non-compliances and to allow for commissioning of a recently built rising main to prevent overflows in the network.

Unitywater's Treatment Services Strategy involves the decommissioning of the Coolum STP within the 2018-2021 timeframe. SKM has considered the impact of the long term plan to decommission the Coolum STP on the scope of work. However, as the works are required to reduce the number of licence non-compliances and the current growth forecast shows that population will reach nearly 35,000 EP by 2021; SKM finds the scope of work still to be prudent.

SKM is satisfied that a range of options were adequately selected and reviewed and that the scope of works is appropriate to meet the project need.

SKM finds the costs for the EPCM contract and the costs for the construction contract to be efficient.

In summary, SKM finds that the project is prudent and efficient.

5.5.4 Northern Services Centre construction

The Northern Service Centre (NSC) is a Build Own Operate (BOO) scheme constructed on land owned by Unitywater adjacent to the Maroochy STP. The development of the NSC will consolidate a number of sites across the northern region of Unitywater's operating area. The site will provide a single location from which service functions will operate.

As the continuation of renting multiple facilities from SCC is proven not a viable option, there is a need for Unitywater to identify new accommodation for staff. SKM agrees that the consolidation of multiple sites in the northern region is likely to result in improved collocation and integration of work practices business and lower operating costs associated with the rationalisation of functional support and the rent of multiple facilities. SKM finds the NSC construction to be prudent.

SKM is satisfied that a range of options were assessed and that an appropriate evaluation process was applied. SKM considers that the selection of a build, own, operate option was appropriate, based on information received subsequent to the completion of the independent report.

SKM accepts that Unitywater has followed their Procurement and Disposals Policy, which requires the conduct of open tenders for works in excess of $150,000 in the procurement of bulk earthworks and D&C services for the project. No barriers to the deliverability of the NSC have been identified except for potential rainfall periods that could delay the project schedule.

In general, SKM considers that the standards used for this project are appropriate however suggests that the need for additional insulated linings be further reviewed.

SKM finds that the tender process used for the evaluation and subsequent award of the bulk earthworks contract and the D&C contract was robust and that the costs are in line with market conditions. SKM find that the construction costs, $6.8 million, are efficient.

SKM notes that the budget line item selected for review (C1279 NSC Construction $3.97 million) is lower than the reviewed construction costs ($6.8 million). SKM understands that the difference in costs is likely to be captured in one of two other budget line items (C1444, Northern Centre's – Property or C0002, Service St, Kuluin - SCW Service Centre (Depot)). SKM recommends that the full expenditure value of $3.97 million be included in the budget.

In summary, SKM finds that the project is prudent and efficient.

5.5.5 SCADA Improvement and Integration Program

Unitywater currently operates 11 separate SCADA systems, which were inherited from the previous two water utilities which amalgamated to form Unitywater (Moreton Bay Water (MBW)) and Sunshine Coast Water (SCW)). Both MBW and SCW had planned SCADA System and Telemetry Upgrades prior to the formation of Unitywater. After the formation of Unitywater, the SCADA Upgrade Programs were consolidated across both regions into one program of four sub-projects. The SCADA Improvement Program is one of these four sub-projects. The project involves replacing all 11 legacy SCADA systems with two systems (North and South) within one single platform. All Remote Telemetry Units are to be replaced and site enabling works to allow for a common control platform.

SKM is satisfied that the project will result in a consistent platform for the operation of the SCADA network across the Unitywater service area and should result in long term business efficiency. SKM consider that the drivers of compliance, improvement and renewal are all relevant to this project and support the need for the project.

SKM considers that historically the project has not been delivered efficiently as it appears to have been subject to a number of changes that have caused issues around timing and costs. However, SKM considers that the consolidation of the two original contract agreements into an Integrated Contract was an appropriate action. The subsequent change to the procurement strategy, following poor performance from the incumbent contractor, indicates that Unitywater is seeking efficiency gains in the delivery of the project.

SKM considers the decision to award Phase 2.3a to Automation IT appropriate following a robust tender evaluation. SKM considers the decision to award Phase 2.2a to Lend Lease appropriate given the timing and risk considerations.

The estimated value of remaining work for the project was developed based SKM's understanding of committed funds for the project, the revised cost per site for Phase 2.2a, the assumption that Automation IT will deliver the remainder of the future works, and assumptions relating to project management and contingencies percentages. SKM's order of magnitude estimate was approximately $1.11 million less than the estimated value of remaining work developed based on information provided by Unitywater. As SKM's estimated value of remaining work is higher than the value originally submitted by Unitywater, SKM suggests that the lower number be adopted until Unitywater's revised templates are submitted.

5.5.6 Fleet - trucks

The Plant and Fleet Asset Replacement Program will replace plant and fleet assets that have passed the end of their lease agreement or have passed their optimal replacement points. Unitywater's Fleet – Trucks program was selected for review by the Authority. The program is replacing 39 trucks in the 2013-15 period.

The primary driver of renewal has been demonstrated as the fleet function is vital to Unitywater's ability to achieve business objectives in meeting the needs of its customers. The review and justification of the need of vehicles in the future, prior to inclusion in the replacement program, is appropriate.

The replacements are based on industry recommend Best Appropriate Practice using factors such as utilisation and Optimal Replacement Point as the triggers to replace the asset. Based on the current maximum life replacement triggers, SKM agrees with the 23 trucks and 16 trucks proposed for replacement in 2013-14 and

2014-15 respectively. SKM accepts the inclusion of the additional 7 trucks carried over from 2012-13 in the 2013-14 replacement program.

SKM accepts that the use of the Local Buy Pty Ltd panel arrangements allows Unitywater to leverage its purchasing power and is an appropriate method for purchasing truck cab chassis and standard bodies.

The use of an estimated replacement cost based on historical purchases is good practice, with actual costs determined through the Local Buy Panel.

Based on the replacement of 30 trucks in 2013-14 and 16 trucks in 2014-15, SKM considers that $5.32 million and $2.88 million, for 2013-14 and 2014-15 respectively, be accepted by the Authority. SKM recommends a reduction of $0.52 million as the costs for the carry over value from the previous year does not align to the number of trucks and the unit rate for these vehicles.

Overall, the project is found to be prudent but only partially efficient.

5.6 Overall sample capital project review summary

A sample of six projects was assessed as a representative sample of the capital expenditure program Unitywater for the 2013-15 period. These projects have been assessed these against the Authority's definitions of prudency and efficiency, including the standards of service, scope of work, timeliness of delivery and the costs.

Table 66 provides an overview of the final assessment made for each project or program.

Of the six projects reviewed in detail, expenditure was found to be prudent for all of the projects.

Expenditure was found to be efficient for half of the project reviewed:

- The Maleny STP Upgrade project
- The Coolum STP Upgrade project
- The Northern Services Centre Construction project

The remaining projects were found to be prudent but not efficient:

- The Fleet - Trucks project was found to prudent but not totally efficient as the expenditure allowed for the seven trucks carried over from the previous period was found to be excessive. SKM recommends a reduction of $0.53 million over the 2013-15 period.
- The Suncoast Sewerage Scheme Transfer System Project has high design costs and the project management costs, due in part to the technical complexity of the project and also to the highly staged delivery of the project. SKM recommends a reduction in the overall costs of the project of $0.41 million.
- The SCADA Improvement and Integration Program was found to prudent but not efficient as SKM's estimated value of remaining work for the project is approximately $1.11 million less than the estimated value of remaining work developed based on information provided by Unitywater.

For the last two projects, SKM's estimated value of remaining work is higher than the value originally submitted by Unitywater. In both instances, SKM has adopted the lower number submitted by Unitywater. It is recommended that the Authority review the overall project costs when Unitywater resubmits its templates.

Table 66 : Overview of prudency and efficiency of capital expenditure sample selection ($'000)

Project Name	Project Number	Assessment			Unitywater Proposed (from QCA template)			Proposed Adjustment			SKM Recommended		
		Prudent	Efficient	Comment	Previous years	2013-14	2014-15	Previous years	2013-14	2014-15	Previous years	2013-14	2014-15
Maleny STP Upgrade	C0028	✓	✓	Prudent and efficient	NA	10,776	679	NA	0	0	NA	10,776	679
Suncoast Sewerage Scheme Transfer System	C0399	✓	✗	As SKM's estimated value of remaining work is higher than the value originally submitted by Unitywater, SKM suggests that the lower number be adopted until the variation can be resolved.	3,741	5,762	-	0	0	0	3,741	5,762	-
Coolum STP Upgrade, inlet works	C0886	✓	✓	Prudent and efficient	NA	5,525	-	NA	0	0	NA	5,525	0
Northern Services Centre Construction	C1279	✓	✓	Prudent and efficient	NA	3,970	-	NA	0	0	NA	3,970	0
SCADA Improvement and Integration Program	C9089	✓	✗	As SKM's estimated value of remaining work is higher than the value originally submitted by Unitywater, SKM suggests that the lower number be adopted until the variation can be resolved.	NA	12,572	3,572	NA	0	0	NA	12,572	3,572
Fleet - Trucks	C9993	✓	✗	Recommended reduction of in the unit cost for the 7 "Carry Over" trucks.	NA	4,862	3,880	NA	477	-1,000	NA	5,339	2,880
Total					**3,741**	**43,467**	**8,131**	**0**	**477**	**-1,000**	**3,741**	**43,944**	**7,131**

5.7 Efficiency gains

SKM has reviewed Unitywater' capital expenditure against other Australian water companies. In particular, SKM sourced data from the National Performance Report 2011–12 from which a number of comparative metrics were developed.

Comparator entities that were included, where appropriate data was available, are outlined in Table 67.

Table 67. : Services provided by utilities

Water Utility	Service		
	Wastewater	Water treatment	Water distribution
ACTEW	✓	✓	✓
Gosford City Council	✓	✓	✓
Hunter Water Corporation	✓	✓	✓
Sydney Water Corporation	✓	✓	✓
Wyong Shire Council	✓	✓	✓
Power and Water - Darwin	✓	✓	✓
Cairns Water and Waste	✓	✓	✓
SA Water - Adelaide	✓	✓	✓
Barwon Water	✓	✓	✓
Central Gippsland Water	✓	✓	✓
City West Water	✓	✘	✓
Coliban Water	✓	✓	✓
Goulburn Valley Water	✓	✓	✓
South East Water Ltd	✓	✘	✓
Western Water	✓	✓	✓
Central Highlands Water	✓	✓	✓
Water Corporation - Perth	✓	✓	✓
Townsville Water	✓	✓	✓
Ben Lomond Water	✓	✓	✓
Southern Water	✓	✓	✓

For sewerage related expenditure the metrics developed were:

- Sewerage capital expenditure ($'000)/Connection density (number of connections per km of sewer main)
- Sewerage capital expenditure ($'000)/Volume sewage collected (ML)
- Sewerage capital expenditure ($'000)/Number of sewer property connections

The metrics for Unitywater have been compared to Australian water companies as displayed below. For consistency, in the following review SKM has used the capital expenditure values submitted by Unitywater for the National Performance Report 2011–12, as opposed to the values from Unitywater's information return.

A comparison of the costs submitted for the National Performance Report 2011–12 and the 2011–12 actual costs are shown in Table 68.

Table 68 : Comparison of National Performance Report capital expenditure to capital expenditure (as commissioned) submitted to the Authority

Entity	National Performance Report 2011–12			QCA submission
	Total water supply capital expenditure ($000s)	Total sewerage capital expenditure ($000s)	Total combined capital expenditure ($000s)	Total capital expenditure ($000s)
Unitywater	139,413	106,787	246,200	203,414

It is noted that the values submitted for the National Performance Report 2011–12 ($246.2 million) is considerably higher than the actual and forecast costs for 2011-12 ($203.4 million) , 2012-13 ($115.6 million), 2013-14 ($151.3 million) and 2014-15 ($136.7 million).

As can been seen from the following figures, even with this high value, Unitywater appears to be in line with the comparator entities.

Figure 5-5 : Sewerage Capital Expenditure ($'000)/No of connections per km of sewer main

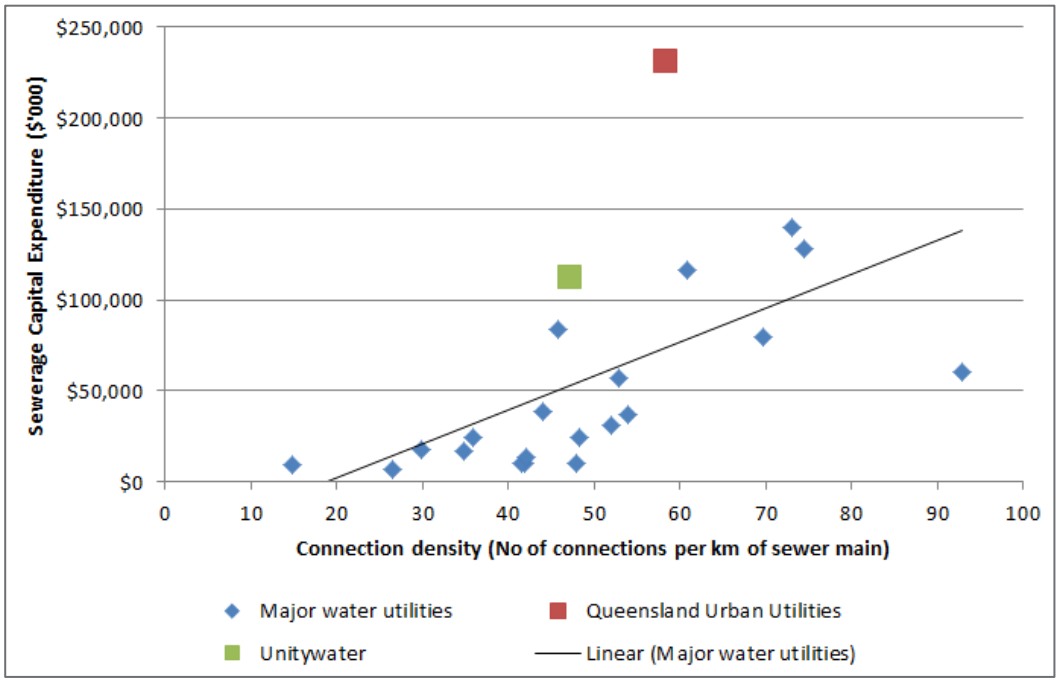


Figure 5-6 Sewerage Capital Expenditure ($'000)/Volume sewage collected (ML)

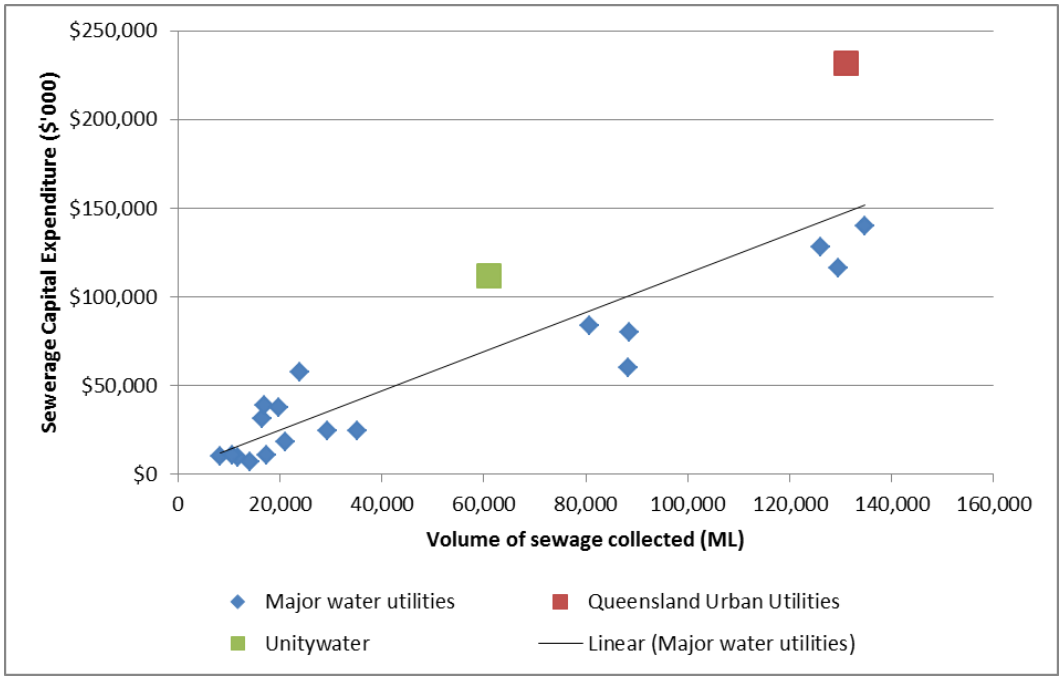
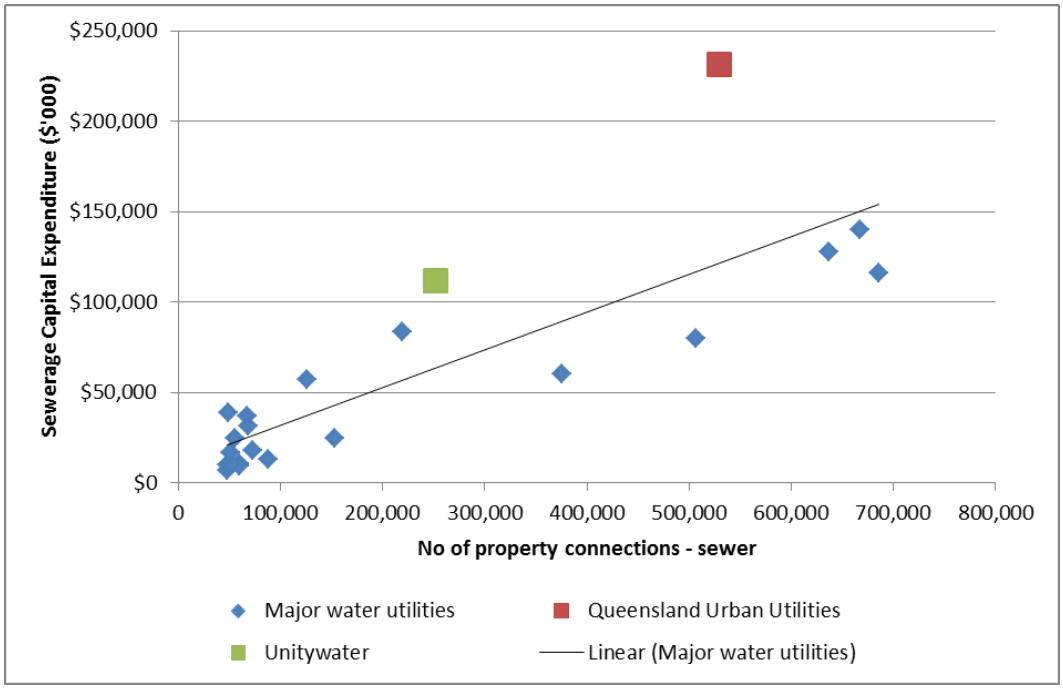


Figure 5-7 Sewerage Capital Expenditure ($'000)/Number of sewer property connections



For water related expenditure the metric developed were:

- Water capital expenditure ($'000)/Connection density (number of connections per km of water main)
- Water capital expenditure ($'000)/Volume potable water supplied (ML)
- Water capital expenditure ($'000)/Number of water property connections

As the water capital expenditure includes both treatment of water and distribution of water, it has been necessary to include a proportion of Seqwater's capital costs into the values provided by Unitywater in order to

create a fair comparison. SKM notes that in undertaking a review of the combined capital costs of Unitywater and Seqwater, any inefficiencies identified may be as a result of Seqwater's capital expenditure rather than Unitywater's capital expenditure.

Seqwater's capital expenditure was prorated to the entities based on the volume of water supplied.

Table 69 : Prorating Seqwater capital expenditure based on volume of water supplied

Entity	Metric	Quantity	%
Seqwater	Volume of bulk water exports (ML)	277,083	
Unitywater	Volume of potable water received from bulk supplier (ML)	56,825	21
Seqwater	Total water supply capital expenditure ($000s)	528,730	
Unitywater	Calculated proportion of water supply capital expenditure ($000s)	108,434	21

It can be seen from the following figures that the combination of Unitywater and prorated Seqwater capital expenditure is similar to that of other similar water utilities.

Figure 5-8 : Water capital expenditure ($'000)/No of connections per length of water mains

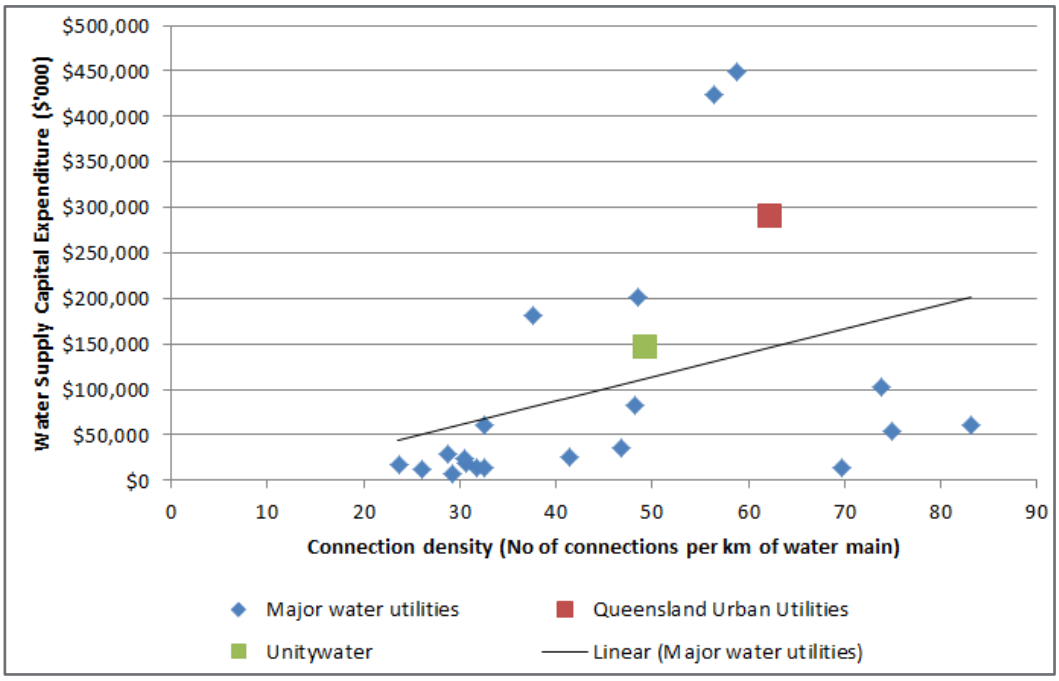


Figure 5-9 Water capital expenditure ($'000)/Volume potable water supplied (ML)

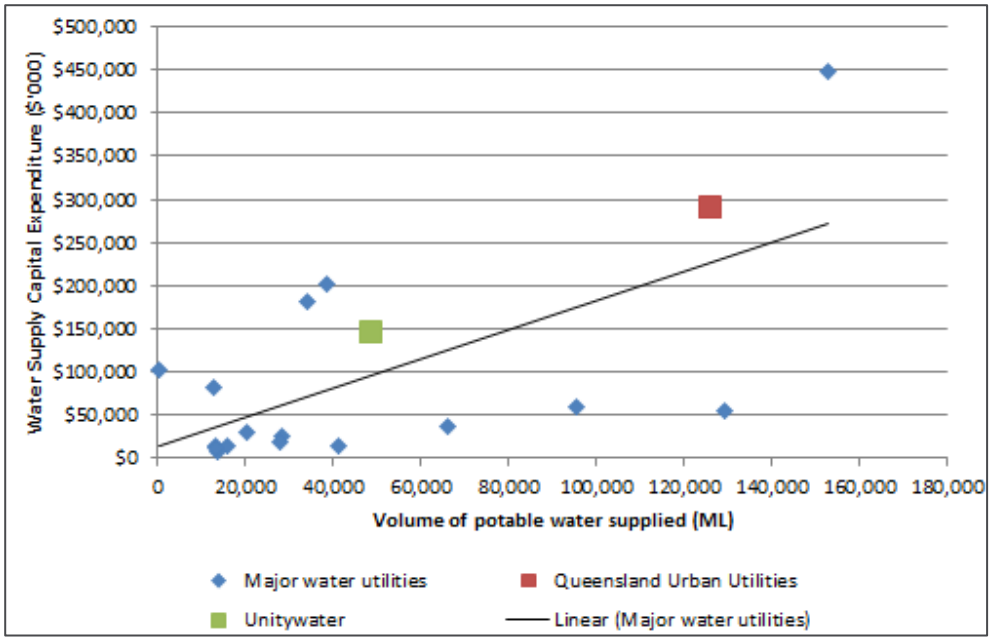
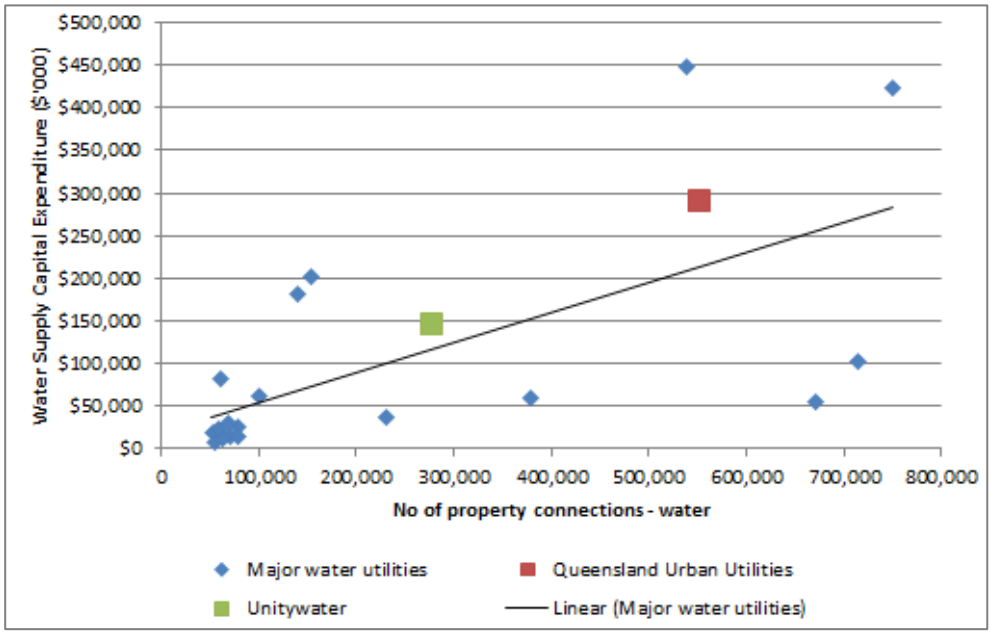


Figure 5-10 Water capital expenditure ($'000)/Number of water property connections



Whilst SKM considers benchmarking a useful tool for highlighting areas of potential inefficiency, the nature of capital expenditure is that it is typically 'lumpy', easily skewed by the commissioning of one or two large projects, so comparisons for a single point in time are difficult.

SKM considers "bottom-up" benchmarks are likely to provide the most meaningful comparisons for the Authority, though some measures could be used for internal time-series benchmarks. Overall, SKM considers benchmarking to be a more useful tool in assessing operating expenditure than capital expenditure, as it is generally more consistent over time, and directly related to factors such as network size, number of customers or demand.

5.8 Asset lives

Unitywater has provided an information return outlining nominal asset lives for use in economic regulation to depreciate at the asset class level.

The Authority's SEQ Interim Price Monitoring Information Requirement Template allows information to be provided on the following two sheets.

- 5.8.1.1 Asset Lives Details for RAB
- 5.8.1.2 Asset Lives Details for RAB - Tax Purposes

These categories are considered below.

5.8.1 Useful lives for new assets

Information on asset lives for all asset types, including reservoirs, treatment and pump stations have been provided in Unitywater's submission to the Authority.

Table 70 shows the asset lives for new assets.

Table 70 : Asset lives for new assets

Asset	Drinking water	Other core Water Services	Wastewater via Sewer	Trade waste
Reservoirs	54		80	80
Pump stations	34		46	46
Treatment	47	25	49	49
Associated telemetry and control systems	22	10	10	10
Meters	35	15		
Billing systems	5	5	5	5
Corporate systems	13	13	13	13
Sundry property, plant and equipment	11		10	10
Building other than infrastructure housing	60		60	60
Distribution infrastructure not included in another category	45	66	51	51
Support Services	5	5	5	5
Mains	55	18	55	55
Establishment Costs	8	8	8	8

Source: *Information Requirements Template 2013_14* (Unitywater, 2014)

SKM has compared the provided asset lives to available benchmarks. The Water Services Association of Australia (WSAA), the Pressure Sewerage Code of Australia (WSA 07-2007 V1.1) and the WSAA Water Supply Code of Australia (WSA 03-2011) provide benchmarks for asset lives.

Table 71 presents benchmarks of selected asset lives and a comparison with those used by Unitywater.

Table 71 : Benchmarking of asset lives

Asset	Benchmark	Comment
Water and Wastewater Distribution infrastructure	The WSA 07-2007 Pressure Sewerage Code of Australia V1.1 suggests a nominal asset design life of 100 years for pressure sewers and laterals and property discharge lines, 20 -30 years valves. The WSA 03-2011 Water Supply Code of Australia suggests a typical asset design life of 100 years for water mains, 30 years for valves.	A 55 year asset life for water and wastewater mains is reasonable.
Reservoirs	The WSA 03-2002 Water Supply Code of Australia suggests a typical asset design life of 50 years for reservoirs.	The assumption of a 54 year asset life, for water reservoirs respectively, is reasonable. The allowance of 80 year asset life for wastewater reservoirs is assumed to be an error (Unitywater will not have reservoirs for wastewater or tradewaste)
Treatment	No combined treatment asset life is provided.	Treatment consists of a number of civil, mechanical and electrical assets. The assumption of a 47 and 49 year asset life, for water and wastewater treatment plants respectively is reasonable but is slightly higher than Queensland Urban Utilities.
Pump stations	The WSA 03-2011 Water Supply Code of Australia suggests a typical asset design life of 20 years for pumps (note that this contributes to the mechanical component only).	Pump stations consist of a number of civil, mechanical and electrical assets. The assumption of a 34 and 46 year asset life, for water and wastewater pump stations is likely to reflect the civil component of pump stations, particularly for wastewater pump stations where a wet well and emergency storage will be required.
Telemetry & SCADA	The WSA 03-2011 Water Supply Code of Australia suggests a typical asset design life of 15 years for SCADA.	A 22 and 32 year asset life, for water and wastewater telemetry & SCADA respectively, is longer than industry norms.

5.8.2 Useful lives for new assets for tax purposes

Information on asset lives for all asset types, including reservoirs, treatment and pump stations have been provided in Unitywater's submission to the Authority.

Comparison of the two sheets *5.8.1.1 Asset Lives Details for RAB* and *5.8.1.2 Asset Lives Details for RAB - Tax Purposes* shows that the tax useful life has been assumed to be the same as the regulatory useful life.

The TR 2013/4 Taxation Ruling Income tax: effective life of depreciating assets (applicable from 1 July 2013) discusses the methodology used by the Commissioner of Taxation in making determinations of the effective life of depreciating assets under section 40-100 of the Income Tax Assessment Act 1997 (ITAA 1997). The effective life of a depreciating asset is used to work out the asset's decline in value. (ATO, 2013)

The Commissioner makes a determination of the effective life of a depreciating asset by estimating the period (in years, including fractions of years) it can be used by any entity for a taxable purpose. In the Commissioners' determination, a number of factors are considered including:

- The physical life of the asset
- Engineering information
- The manufacturer's specifications
- The way in which the asset is used by an industry
- The level of repairs and maintenance adopted by users of the asset
- Industry standards

- The use of the asset by different industries
- Retention periods
- Obsolescence
- Scrapping or abandonment practices
- If the asset is leased, the period of the lease
- Economic or financial analysis indicating the period over which that asset is intended for use
- An analysis of the decline of market value of an asset class

It is important to note that the Commissioner does not consider that the physical life of an asset is necessarily its effective life because, all the factors must be considered before an estimate of effective life is made. A consideration of these factors may often indicate that an asset's effective life is a period shorter than its physical life. (ATO, 2013)

SKM cross referenced the effective tax lives provided by Unitywater with the 'Effective lives (Industry Categories)' Table A as at 1 July 2013 provided in the TR 2013/4 Taxation Ruling (ATO, 2013).

Table 72 : Review of effective life

Asset	Drinking water	Other core water services	Wastewater via Sewer	Trade waste	Revised Effective Life (Tax)+
Reservoirs	54		80	80	80
Pump stations	34		46	46	25
Treatment	47	25	49	49	Comprised of a number of individual assets
Associated telemetry and control systems	22	10	32	32	10
Meters	35	15			20
Billing systems	5	5	5	5	Not covered
Corporate systems	13	13	13	13	Not covered
Sundry property, plant and equipment	11		10	10	Require further clarification of assets to determine life
Building other than infrastructure housing	60		60	60	No direct correlation with asset type
Distribution infrastructure not included in another category	45	66	51	51	No direct correlation with asset type
Support Services	5	5	5	5	Not covered
Mains	55	18	55	55	80
Establishment Costs	8	8	8	8	Not covered

+Determined through review of Australian Government TR2013/4 Taxation Ruling: Income Tax, effective life of depreciating assets (applicable from 1 July 2013)

The Authority template refers to an asset class as opposed to individual assets, i.e. for treatment plants, sundry plant and equipment and establishment costs, which cannot be cross referenced with TR 2013/4 Taxation Ruling. Without a breakdown of individual asset types within the groups a revised effective tax life cannot be determined.

For the treatment plants asset group the components of an 'average' wastewater treatment plant were selected and assessed to determine the average effective life of the group of assets. The 'average' treatment plant

assessed included pre-treatment comprising of sewer mains, pump station, screening and grit removal; secondary treatment comprising of biological nutrient removal assets (aerators and blowers, BNR tanks and mixers) and secondary clarifiers; and tertiary treatment comprising of UV disinfection, aerobic digesters, sludge thickening tanks, belt presses and sludge aerators and blowers. Additional assets incorporated for the overall operation of the plant included valves, chemical dosing pumps, flow meters, telemetry, variable speed drives, chlorine residual analysers, pH meters, dissolved oxygen probes, level sensors, etc. Based on a simplistic calculation, including one of each asset type, the median effective life is 25 years. This is significantly lower than the 49 years suggested by Unitywater. It should be noted that this calculation was performed to determine a relative figure. For a more accurate determination the Authority information requirement template would need to be modified to include all asset types, and the quantities, at each treatment plant.

Effective lives for systems such as billing and corporate are not covered by the taxation ruling and therefore cannot be assessed, however as a billing system would largely comprise of computer equipment SKM considers that a life of three to four years would be reasonable. Buildings do not have any direct correlation with any asset and life included in the TR 2013/4 Taxation Ruling, therefore a revised effective tax life cannot be determined.

The asset lives for mains, for water, wastewater and other core water services, water reservoirs, water and wastewater pump stations, telemetry/ SCADA for water and wastewater and water and wastewater meters do not correlate to TR 2013/4 Taxation Ruling guidance. Although there is no information in relation to the effective life for system lives stated by Unitywater asset lives for billing systems and corporate systems greatly exceed those stated by Queensland Urban Utilities. It is suggested that these be reviewed by Unitywater when next assessing their effective lives.

It should also be noted that whilst SKM offers advice based on publicly available information and our interpretation is based on experience, the above should not be interpreted by either the Authority or by Unitywater as tax advice. Therefore, although SKM can advise that effective lives do not correlate to TR 2013/4 Taxation Ruling guidance; it is recommended that Unitywater seeks guidance from its accountants/auditors regarding estimates of effective asset lives for tax purposes.

5.8.3 Summary

SKM has reviewed Unitywater's overall capital expenditure program for 2013-15 and undertaken a detail assessment of six projects selected by the Authority.

Over the 2013-15 period, the majority of capital expenditure (57%) is incurred for sewerage assets; with water and support services accounting for a further 21% each. The majority of capital expenditure for 2013-15 is incurred in the North (Sunshine Coast) region. The two major drivers for expenditure are growth and renewals.

The projects selected for review are representative of the capital expenditure profile with three sewerage related projects, and three supporting services projects (fleet, Northern Service Centre and SCADA).

The forecasts for capital expenditure were compared to historical forecasts. SKM notes that there is a net decrease in forecasted capital expenditure of $207.8 million in the 2012-15 period from previous forecasts. Unitywater states that the reasons for this include optimising capital forecasts, gaining more information on assets condition and performance and achieving efficiencies and sourcing alternatives to expenditure.

SKM reviewed in detail six projects. In general, for the project sampled, SKM has found that:

- All projects demonstrate that Unitywater has followed its capital delivery processes which are used to form Unitywater's gateway process, including production of needs analysis, business cases, contract recommendation and approval reports, and monthly reporting for major projects.
- All projects have documentation clearly identifying the key driver for the project and demonstrating a thorough review of project options to address the project need including financial analysis.
- All projects reviewed demonstrated a consideration of risk and asset management.

- The STP projects demonstrated a good cost tracking process, including a forecast to complete and the reduction in contingency allowances as the project neared completion.
- The majority of projects demonstrated significant inconsistencies between sources of information. Whilst SKM is aware projects progress over time, and hence changes to scope and costs are therefore likely, these changes are not always clearly documented in the information provided for this review.

With regards to inconsistencies in data, in particular there are major variations between the expenditure proposed to the Authority and the budgeted values in the supporting documentation. SKM understands that this may in part due to problems with Unitywater's excel spreadsheet based RAB. SKM understands that Unitywater's June 2013 submission is based on interim templates, which will be updated prior to QCA's draft report.

Unitywater has recently undertaken a Treatment Services Strategy to consider a high level strategic review of how it provides treatment plant services over the entire region, both in the short term and long term. This clearly demonstrates consideration of the prudency and the efficiency of expenditure from a regional basis. Due to the recent production of this document, the projects under review do not stem from the recommendations of this report. However, SKM notes that the sampled projects are in line with the recommendations of the Treatment Services Strategy.

Unitywater is still managing legacy projects which have arisen from the formation of the company. Of the projects sampled, this includes the SCADA Improvement Project and the Northern Services Centre. These projects have arisen due to the need to integrate systems and to separate assets from the relevant councils.

On the basis of the detailed review undertaken in respect of the six sampled projects, SKM has recommended that the allowed 2013-15 expenditure be reduced for three of the six projects, including:

- One project for which the project management costs are considered to be excessive (Suncoast Sewerage Scheme Transfer System). SKM recommends a reduction in the overall costs of the project of $0.41 million.
- One project for which there is a recommended reduction costs, as the proposed costs do not match the scope of works, ie the number of trucks and unit costs of the trucks do not equal the submitted value (Fleet – Trucks). SKM recommends a reduction of $0.53 million over the 2013-15 period.
- One project for which SKM's order of magnitude estimate of costs to complete was lower than the estimate by Unitywater (SCADA Improvement & Integration Program). SKM recommends a reduction in the overall costs of the project of $1.11 million.

As noted above, SKM has experienced ongoing difficulties in reconciling costs submitted in the Authority's templates to costs in supporting documents. The values originally submitted to the Authority were in half of the projects reviewed substantially lower than the costs shown in supporting documentation (eg SCADA Improvement & Integration Program, Suncoast Sewerage Scheme Transfer System, Northern Service Centre). SKM has assessed the total costs of the project and provided a recommendation on the total project cost. For consistency, where SKM's estimated cost to complete exceeds the value originally submitted to the Authority, SKM has adopted the lower value until the errors in the templates are resolved.

SKM recommends that the Authority reviews the total costs for these projects when Unitywater resubmits its templates.

SKM recommends that 2013-15 forecast expenditure in respect of the sampled projects is reduced by $2.05 million, which represents a 4% reduction in the forecast expenditure ($52.5 million) for those projects.

6. Conclusion

6.1 Policies and procedures

SKM has undertaken a review of the policies and procedures provided by Unitywater. Based on the documents reviewed, the deficiencies of these policies are summarised in the table below.

Requirements	Capital expenditure policies and procedures	Operating expenditure policies and procedures
Has a standardised approach to cost estimating	Compliant, but not robust	Not applicable
A summary document is prepared	Compliant and robust	Not applicable
An implementation strategy is prepared	Compliant and robust	Not applicable
Has a gateway review process	Not compliant	Not applicable
Includes detailed analysis of options for major projects	Compliant and robust	Not applicable
Has a benefits realisation assessment process	Not compliant	Not applicable
Includes requirements to comply with relevant legislation	Compliant and robust	Compliant and robust
Includes requirements to take account of regional issues.	Not compliant	Not compliant
Only commissioned capital expenditure from 1 July 2010 is included in the RAB	Not compliant	Not applicable
Overall capital expenditure program and delivery processes	Not compliant	Not applicable
Asset management in accordance with good industry practice	Not compliant	Not compliant
Procurement in accordance with good industry practice	Compliant and robust	Compliant and robust
Budget formation in accordance with good industry practice	Compliant and robust	Compliant and robust

6.2 Operating costs

SKM has reviewed Unitywater's overall operating costs for 2013-15 and undertaken a detail assessment of four categories selected by the Authority (corporate overheads, employee expenses, electricity costs and other materials and expenses).

The following reductions to the 2013-14 and 2014-15 forecasts are recommended:

- Corporate Costs - reduction of $5.031 million in 2013-14 and $5.803 million in 2014-15 through a reduction of FTEs across corporate functions
- Employee Expenses - a proposed reduction of $1.32 million in 2013-14 due to anticipated gains from improvements in Field Services operations, and $1.361 million in 2014-15 (which is equivalent to the proposed 2013-14 reduction escalated by 3.1% in line with the escalation of employee expenses between 2013-14 and 2014-15)
- Electricity - a proposed reduction of $0.72 million in 2013-14 in line with the recommended saving from the 2012-13 price monitoring review, and $0.785 million in 2014-15 (which is equivalent to the proposed 2013-14 reduction escalated by 9% in line with the cost escalation between 2013-14 and 2014-15)
- Other Materials and Services - no proposed reduction in 2013-14 or 2014-15

Table 73 Summary of reductions to 2013-14 operating expenditure forecast (values in nominal $'000s)

Category	2013-15 submission	Recommended reduction	Revised 2013-14 budget	Variance
Corporate Costs	53,245	5,031	48,214	-9.5%
Employee Expenses	56,113	1,320	54,793	-2.4%
Electricity	9,866	720	9,146	-7.3%

Category	2013-15 submission	Recommended reduction	Revised 2013-14 budget	Variance
Other Materials and Services	11,073	0	11,073	0.0%
Total 2013-14 forecast[70]	149,853	7,071	142,782	-4.7%

Table 74 Summary of reductions to 2014-15 operating expenditure forecast (values in nominal $'000s)

Category	2013-15 submission	Recommended reduction	Revised 2013-14 budget	Variance
Corporate Costs	49,019	5,803	43,216	-11.8%
Employee Expenses	57,907	1,361	56,546	-2.4%
Electricity	10,493	785	9,708	-7.5%
Other Materials and Services	11,442	0	11,442	0.0%
Total 2014-15 forecast[71]	149,235	7,949	141,286	-5.3%

6.3 Capital expenditure

On the basis of the detailed review undertaken in respect of the six sampled projects, SKM has recommended that the allowed 2013-15 expenditure be reduced for three of the six projects, including:

- One project for which the project management costs are considered to be excessive (Suncoast Sewerage Scheme Transfer System). SKM recommends a reduction in the overall costs of the project of $0.41 million.
- One project for which there is a recommended reduction costs, as the proposed costs do not match the scope of works, ie the number of trucks and unit costs of the trucks do not equal the submitted value (Fleet – Trucks). SKM recommends a reduction of $0.53 million over the 2013-15 period.
- One project for which SKM's order of magnitude estimate of costs to complete was lower than the estimate by Unitywater (SCADA Improvement & Integration Program). SKM recommends a reduction in the overall costs of the project of $1.11 million.

As noted previously, SKM has experienced ongoing difficulties in reconciling costs submitted in the Authority's templates to costs in supporting documents. In half of the projects reviewed, the values originally submitted in the completed templates were substantially lower than the costs shown in supporting documentation (eg SCADA Improvement & Integration Program, Suncoast Sewerage Scheme Transfer System, Northern Service Centre). SKM has assessed the total costs of the project and provided a recommendation on the total project cost. For consistency, where SKM's estimated cost to complete exceeds the value originally submitted to the Authority, SKM has adopted the lower value until the errors in the templates are resolved.

SKM recommends that the Authority reviews the total costs for these projects when Unitywater resubmits its templates.

SKM recommends that 2013-15 forecast expenditure in respect of the sampled projects is reduced by $2.05 million, which represents a 4% reduction in the forecast expenditure ($52.5 million) for those projects.

[70] There are other categories included in the total 2013/14 forecast, and therefore these values are not the summation of the individual categories shown

[71] There are other categories included in the total 2014/15 forecast, and therefore these values are not the summation of the individual categories shown

Appendix A. C0028 Maleny STP upgrade

A.1 Project description

The existing Maleny STP has been in operation since 1982 and is at its hydraulic capacity. The planned upgrade will increase the capacity to cater for growth in the area, up until 2031, as the population plateaus from 2026, when the equivalent population (EP) is forecast to be 5,000.

As part of the upgrade, Unitywater will be developing a reforestation and wetlands area within the Maleny Community Precinct. Treated water from the Maleny STP will receive additional treatment through the forest and wetland system before entering Obi Obi Creek.

The Maleny STP is being replaced with a Membrane Biological Reactor (MBR) process consistent with another major treatment plant at Nambour STP. A land disposal system (forest and wetland) is also being installed to complete the treatment train for Maleny STP. Adoption of the land disposal system will ensure that nutrient discharge to the environment does not increase from the existing level and therefore does not have a worsening impact on Obi Obi Creek (as required by the Queensland Water Act 2000). (Unitywater, 5 July 2013)

A.2 Proposed capital expenditure

Table 75 shows the proposed cost of the C0028 Maleny STP Upgrade within the 2013-15 budget.

Table 75 : C0028 Maleny STP Upgrade proposed capital expenditure ($'000s)

Source	Previous years ($'000)	2013-2014 ($'000)	2014-2015 ($'000)	Subsequent years ($'000)	2013-2015 Total ($'000)
QCA Template[1]	4,668	10,776	679	195	11,455
RFI UW 01-06 Response[2]	6,040	11,543	174	195	11,727

[1] QCA Templates - UW 2013-15 Regulatory Submission.xls (Unitywater, 2013)

[2] 2013/15 Price Monitoring Review - Response to Request for Information – Unitywater Response Maleny STP Upgrade C0028 (Unitywater, 5 July 2013)

Note: Figures are “as incurred” expenditure and exclude any allowance for capital overhead or borrowing (interest) costs.

For the period under review (2013-15) the expenditure outlined in the QCA Template, $11,455,000, and that outlined in the RFI UW 01-06 Response, $11,727,000, are comparable.

A.3 Documentation reviewed

The key reference documents used for this review are:

- *QCA Templates - UW 2013-15 Regulatory Submission.xls*, Unitywater, June 2013 (Unitywater, 2013)
- 2013/15 Price Monitoring Review - Response to Request for Information – Unitywater Response Maleny STP Upgrade C0028, Unitywater, 5 July 2013 (Unitywater, 5 July 2013)
- Obi Obi Creek Loads and Sustainability Study – Preliminary Modelling Study (Working Draft), BMT WBM, July 2010 (BMT WBM, 15 July 2010)
- Provision of Treatment Services to the Maleny Sewerage Service Area - Major Business Case, Unitywater, 23 May 2011 (Unitywater, 23 May 2011)
- *Maleny STP Augmentation - Project Needs Analysis*, Unitywater, undated (Unitywater, undated)
- *Contract Recommendation & Approval Report – UW00223 Maleny Wetlands Construction*, Unitywater, 20 May 2011 (Unitywater, 20 May 2011)

- Contract Recommendation & Approval Report – UW002150 Maleny STP Upgrade Design and Construct, Unitywater, 20 May 2011 (Unitywater, 20 May 2011)
- *Maleny STP Upgrade Monthly Project Report – May 2013*, Unitywater, May 2013 (Unitywater, May 2013)
- *Obi Obi Creek Loads and Sustainability Study*, BMT WBM, 10 February 2011 (BMT WBM, 10 February 2011)
- Significant Procurement Plan Approval Report – Maleny STP Upgrade – Early Tender Involvement (ETI) Process, Unitywater, August 2010 (Unitywater, August 2010)
- *Maleny Sewage Treatment Plant Upgrade – Plant Layout*, Unitywater, 20 May 2013 (Unitywater, 20 May 2013)
- *Project Schedule - Maleny STP, Upgrade*, Unitywater, 4 June 2013 (Unitywater, 4 June 2013)
- *Cost Report - Maleny Landsborough Rd, Maleny - STP Upgrade*, Unitywater, May 2013 (Unitywater, May 2013)
- Contract Recommendation and Approval Report - Early Tender Involvement (ETI) , Unitywater, 20 May 2011 (Unitywater, 20 May 2011)

A.4 Key drivers

The primary cost driver identified for this project is compliance (Unitywater, 2013) however drivers of growth, renewals, and improvement are also of relevance.

At a high level, Unitywater states the key drivers for the project as:

- Environmental compliance
- Upgrade to cater for forecast population growth
- Renewal to replace existing infrastructure that has reached the end of its life (including civil, mechanical and electrical components) (Unitywater, 5 July 2013)

The drivers of compliance and growth are evidenced by the plant being beyond its hydraulic capacity and as a result failing to comply with a number of aspects of its licence conditions. The plant operates under a licence, issued by the then Department of Environment and Resources Management (DERM) in January 2008, limits the mass loads of nitrogen and phosphorus discharged to Obi Obi Creek to not exceeding 1,095 kg/year and 219 kg/year, respectively. This is equivalent to 500 kL/day average dry weather flow at a nominal total nitrogen and phosphorus concentration of 5 mg/L and 1mg/L respectively in the effluent discharged to Obi Obi Creek. Obi Obi Creek feeds into the Lake Baroon water supply catchment area and hence the Landers Shute Water Treatment Plant, therefore requiring a high level of treatment. (Unitywater, 23 May 2011)

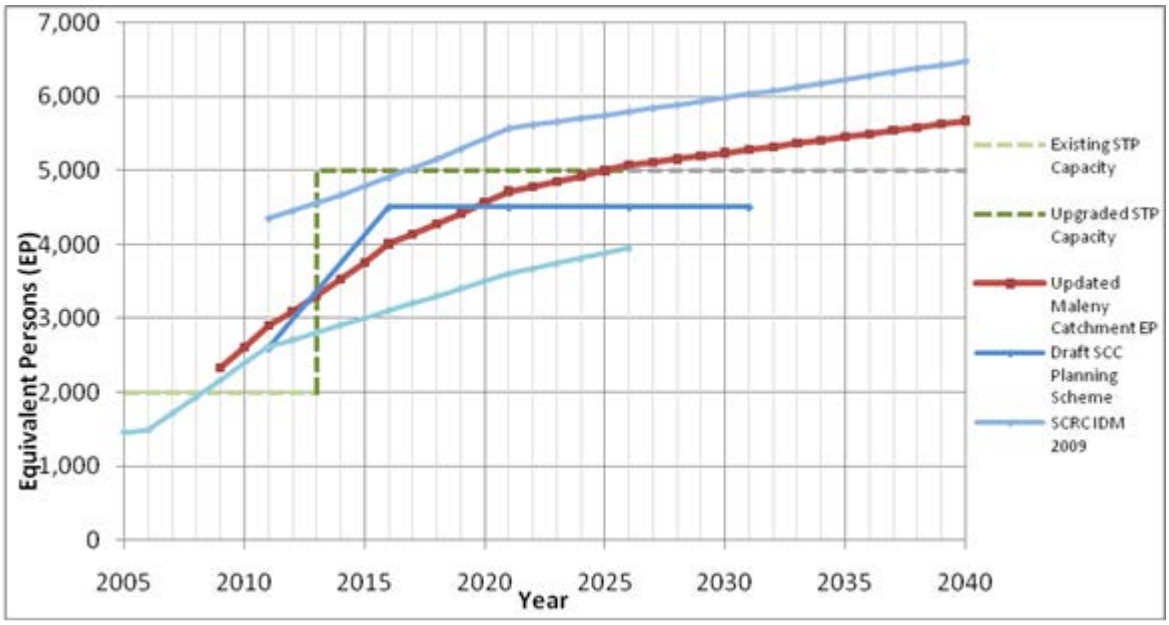
The Maleny STP Augmentation - Project Needs Analysis (Unitywater, undated) states that:

> *"Under the current load the STP is unable to operate within the BOD and Nitrogen licence limits at the outlet of the treatment plant. This is the compliance testing point for the STP and it is therefore technical in breach of its license. However the STP generally irrigates to a Sunshine Coast Regional Council (SCRC) allotment that filters and removes BOD and Nitrogen to within the license limits prior to release into the river preventing environmental harm. This treatment path is not available during wet weather and the plant exceeds the license limits during wet weather events. The department of Environment and Resources Management are aware of this configuration and that it complies with the intent of the license and is unlikely to take action against Unitywater whilst it continues with the planning and implementation of the augmentation."*

The existing Maleny STP has a maximum design capacity of 2,000 EP (Unitywater, 5 July 2013). GHD developed a population forecast for the Maleny STP Catchment which was compared to the Sunshine Coast Infrastructure Demand Model (IDM) 2009 projections, Figure 6-1. Considerations in developing the population projections included the Australian Bureau of Statistics (Census) Information; Population Investigation and Forecasting Unit (Queensland Government) population forecasts; Population Forecasts contained in the

Caloundra City Plan and Caloundra City Local Growth Management Strategy; the number of new connections over the past ten years; and existing and proposed development approvals (Unitywater, 23 May 2011).

Figure 6-1 : Maleny STP Catchment Population Projections (Unitywater, 23 May 2011)



Unitywater water reviewed GHD's methodology and forecast load and concluded that GHD's estimate of the existing load may be 400 to 500 EP greater than the actual load arriving at the STP. (Unitywater, 23 May 2011)

Based on GHD's findings the below population projections were adopted, Table 76.

Table 76 : Adopted Population Projections for Maleny STP Catchment (Unitywater, 23 May 2011)

EP Projection	2009	2011	2016	2021	2026	2031	Ultimate
Residential EP	1,747	2,167	3,171	3,794	4,053	4,231	4,897
Non Residential EP	582	741	837	923	1,018	1,050	1,744
Total EP	2,329	2,908	4,008	4,717	5,071	5,281	6,641
Growth Rate (% p.a.)	-	11.7	6.6	3.3	1.5	0.8	0.8

SKM finds retaining the regional Maleny STP is in line with the Treatment Services Strategy (Unitywater, January 2013). The Strategy states that as the plant serves a small catchment with only modest projected population growth the flows should remain independent with minor upgrades over time.

Based on the adopted population projections the Maleny STP is currently under capacity and is in need of upgrade to meet current and future population projections.

A.5 The scope of works

A.5.1 Solutions development

A number of options were considered for the provision of treatment services for the Maleny sewerage service area. These were:

- Do nothing - Continue with the existing treatment plant and effluent irrigation area.
- Option 1 - Construction of an upgraded Maleny STP with effluent discharged to a forest irrigation area and wetland within the Maleny Community Precinct

- Option 1B - Same as Option 1 with replacement of the traditional STP design with a modular package type treatment system
- Option 2 - Construction of an upgraded Maleny STP with effluent discharged to land to be purchased by Unitywater
- Option 2B - Same as Option 2 with replacement of the traditional STP design with a modular package type treatment system
- Option 3 - Construction of an upgraded Maleny STP with effluent discharged to Obi Obi Creek and nutrient offset works
- Option 3B - Same as Option 3 with replacement of the traditional STP design with a modular package type treatment system
- Option 4 - Construction of a new pump station and trunk main to transfer sewage to the Landsborough STP, staged upgrade of the Landsborough STP and staged upgrade of effluent transfer infrastructure to the Kawana outfall. (Unitywater, 23 May 2011)

Both cost and non-cost criteria were used to evaluate each of the options. Non-cost criteria included:

- Process - Robustness of treatment process. Redundancy. Staging potential.
- Operations - Safety. Ease of operation and maintenance.
- Construction - Ease of construction. Construction risk. Maintaining existing operations during construction.
- Sustainability - Energy consumption (greenhouse gas emissions)
- Environmental Impact - Statutory Approvals. Impact during construction. Biosolids management. Odour management
- Community and Stakeholder impact - Community acceptability (visual/ amenity/ aesthetics/ water quality). Land Tenure Issues

Costs were calculated in 2011 dollars and were developed, in the main, from budget quotes from suppliers, cost estimates from independent estimators, extrapolation of recent similar project pricing and experience (Unitywater, 23 May 2011). A 20 year Net Present Value (NPV) cost based on a discount rate equivalent to the Weighted Average Cost of Capital (WACC) of 9.35% was adopted.

Table 77 presents a summary of the cost and non-criteria analysis.

Table 77 : Options Analysis – Summary and Overall Ranking

Upgrade Option	Initial CAPEX (2011)	NPV	Cost Criteria (50%)	Non Cost Criteria (50%)	Total (100%)	Overall Ranking
Option 1	$ 18.3m	($ 11.1m)	35%	40%	75%	2
Option 1B	$ 14.4m	($ 8.7m)	44%	36%	80%	1
Option 2	$ 18.6m	($ 13.0m)	29%	38%	67%	5
Option 2B	$ 14.6m	($ 11.1m)	37%	34%	71%	3
Option 3	$ 19.1m	($ 9.1m)	40%	23%	63%	6
Option 3B	$ 15.2m	($ 7.0m)	48%	22%	70%	4
Option 4	$ 29.2m	($ 20.9m)	1%	31%	32%	7

Option 1B, a package STP upgrade with effluent discharge to a forest irrigation area and wetland system, was adopted as the preferred option as it ranked second in cost criteria and third in non-cost criteria giving it the overall highest ranking.

The overall scope of work for the project involved the construction of a new 5,000 EP modular STP at the existing Maleny STP site, including:

- Package inlet works
- Activated carbon odour control
- Balance tank and pumps
- Membrane bioreactor (MBR) modular package STP
- Ultraviolet radiation system
- Chlorine contact tank
- Sludge dewatering equipment
- Ancillary equipment including a site pump station, dosing system, building, site roads, etc
- Decommissioning of the existing STP infrastructure not to be retained
- Construction of a new irrigation transfer pipeline from the Maleny STP to the forest irrigation area
- Construction of a new irrigation system
- 3 hectares of wetland earthworks
- Landscaping works for the forest irrigation and wetland (Unitywater, August 2010)

SKM is satisfied that a range of options were adequately selected and reviewed and that the scope of works is appropriate to meet the project need. Whilst the use of recycled water for the local golf course and nurseries was identified, SKM agrees with Unitywater's conclusion that the recycled water market is challenging, with users only wanting very low cost water periodically.

A.5.2 Project delivery

The project is being delivered through a Design and Construct (D&C) contract with Early Tenderer Involvement (ETI).

A workshop involving key Unitywater stakeholders was undertaken to assess and score individual procurement options and identify the preferred procurement strategy for the Maleny STP and effluent discharge system. Based on the assessment, an ETI process was identified as the most efficient form of delivery. (Unitywater, 5 July 2013)

The ETI process was selected as:

- It is a competitive process
- The tenders are very well informed
- Unitywater is able to have significant input into the process
- The project risks are identified early and can be managed appropriately
- The process and design risks lie with the contractors as they are responsible for the final design (Unitywater, August 2010)

The ETI process involved:

- Invitation of Expressions of Interest
- The selection of two respondents to participate in the ETI process
- The presentation of the reference design, draft specifications and contract documents to the ETI participants
- The finalisation of the specifications and contract documents following input and participation of the ETI participants
- The two ETI participants are invited to tender for the detailed design and construction phase

- A contract is awarded to one of the ETI participants (Unitywater, August 2010)

Expressions of Interest were publicly advertised on 19 November 2011. At the close, on 8 December 2011, 13 submissions were received. Each EOI submission was assessed against the published evaluation criteria, being market competitiveness, relevant experience, key personnel skills and experience and resources (all weighted equally). After this initial evaluation process four submissions were excluded from further evaluation due to non-compliant tenders. The submissions were scored against the criteria. The second and third rank submissions were invited to attend an interview, as the top-ranked submission scored significantly higher than the other submissions. After the completion of the interview process the highest two ranked tenders were invited to proceed into the ETI agreement. **(Unitywater, August 2010)**

SKM agrees that the selection of an ETI process was appropriate for this project and that the process used for the shortlisting of the submissions was consistent with Unitywater's Corporate Procurement Plan.

The project is being delivered in three construction packages:

1) Wetland
2) Sewage Treatment Plant
3) Irrigated Forrest

The wetland has been constructed and is currently being allowed to establish before any significant water flows are transferred to the wetland.

The design and construct contract for the STP upgrade was awarded to Monadelphous in December 2012. Design commenced immediately after award, and construction work on the STP site commenced in May 2013 **(Unitywater, 5 July 2013)**. Commissioning of the new plant is anticipated to be completed by June 2014 **(Unitywater, 4 June 2013)**.

A tender for the 'Maleny Irrigated Forest Construction' was called for construction of the forest irrigation systems and distribution systems to support the revegetated forest and constructed wetland. Tenders for this contract closed on 11th July 2013 **(Unitywater, 5 July 2013)**. The development of the forest is anticipated to commence in August 2013 and be completed by October 2015 **(Unitywater, 4 June 2013)**.

No barriers to the deliverability of this aspect have been identified except for potential rainfall periods that could delay the project schedule.

A.6 Standards of service

The SEQ Water Supply and Sewerage Design and Construction Code (Allconnex Water, Queensland Urban Utilities and Unitywater, May 2012) states that for treatment plants, the average dry weather flow (ADWF) to be adopted is as per network flows. The code identifies acceptable ADWF network flow rates for RIGS sewers as 200 L/EP/d, for NuSewer 180 L/EP/d and for existing conventional sewers 210 L/EP/d.

Unitywater adopted an ADWF rate of 185 L/EP/day for the sizing of the plant (Unitywater, 23 May 2011). No documentation of how this value has been determined has been provided. However as it is below the ADWF rate criterion for existing conventional sewers of 210 L/EP/d, SKM accepts the use of 185 L/EP/day.

The core of the SEQ Water Supply and Sewerage Design and Construction Code is based on National Codes, developed and copyrighted by the Water Services Association of Australia (WSAA).

The five core National Codes for the planning, design and construction of water supply and sewerage assets are:

- WSA 02-2002 Sewerage Code of Australia;
- WSA 03-2011 Water Supply Code of Australia;
- WSA 04-2005 Sewage Pumping Station Code of Australia;

- WSA 06-2008 Vacuum Sewerage Code of Australia; and
- WSA 07-2007 Pressure Sewerage Code of Australia.

The Sustainable Planning Act (2009) assigns precedence to the SEQ Water Supply and Sewerage Design and Construction Code over Council planning schemes maintain the consistency of requirement across the region.

SKM considers that the standards used for this project are appropriate.

A.7 Project cost

The current approved budget, Gate 3 - Approved November 2012, for the overall project is included below in Table 78.

Table 78 : Current approved budget (Unitywater, 5 July 2013)

Item	Budget
Project Management (Activity Code 63)	$1,406,122
Land/Authority/ Approvals (Activity Code 60)	$148,493
Design (Activity Code 61)	$2,295,542
Construction (Activity Code 62)	$12,676,591
Commissioning (Activity Code 64)	$453,312
Contingencies (Activity Code 65)	$972,990
Total Budget	**$17,953,050**

For the Wetland Construction Contract, public tenders were invited in July 2012 for construction of the wetland in accordance with GHD's design. Six tenders were received for the contract, ranging in price from $673,336 to $2,112,184. A 'weighted attribute' tender evaluation was carried out, where tenders were assessed systematically taking into account both price and non-price attributes of each submission. At the time of tendering the budget estimate for this contract was $1,238,000 (plus contingency). The contract was awarded to Scape Shapes Landscaping for a contract value of $835,542, resulting in a saving of $400,000 from the budget estimate.

One major variation (greater than $10,000) has been received and approved, to date, from Scape Shapes Landscaping. A contingency of 10% was allowed on the contract price, $83,554. The variations on this component of the project have exceed the allowed contingency however as the contract price was approximately $400,00 lower than estimated overall the project budget it is still within the original budget estimate.

For the STP Design and Construct Contract, at the conclusion of the ETI procurement process, Unitywater received two tenders from the two ETI participants, Aquatec-Maxcon and Monadelphous. The budget for this contract was $8,624,431. Both tenderers initial prices were significantly higher than the budget allowance for this contract.

The project team carried out measures to reduce the tendered prices. This included the following activities:

- Negotiation
- Scope review – two areas for potential adjustment and cost savings were identified as the sludge stabilisation and dewatering and the control building and laboratory. For the sludge, it was decided to transfer the sludge to the Landsborough STP for processing instead of processing it on site. For the control building and laboratory, it was decided that instead of a whole new control room and laboratory, a small lunch room and amenities facilities would be sufficient.
- Best and Final Offer (BAFO) and Further Scope Review – it was decided to utilise an unused demountable building from another site

- Further Negotiations

The tenders were evaluated on:

- Whole of life cost – 60% weighting
- Plant design and quality – 30% weighting
- Key personnel – 10% weighting (Unitywater, 20 May 2011)

The NPV model used a 9.35% discount rate, a 20 year planning horizon, a 30% tax rate, a 50 year tax useful life and an escalation index advised by Unitywater financial services. The operating expenditure included power consumption costs, biosolids disposal costs, additive usage costs, and labour. The capital expenditure cost included the tendered construction cost and the cost to replace large consumable items of equipment. (Unitywater, 20 May 2011)

The results of the price and non-price assessments are outlined below in Table 79.

Table 79 : Price and non-price assessment outcomes (Unitywater, 20 May 2011)

Tender	Price Score (out of 60)	Non-Price Score		Overall Score (out of 100)
		Un-weighted (out of 40)	Weighted (out of 40)	
Aquatec-Maxcon	60	22	29	89
Monadelphous	59	30	40	99

Monadelphous was selected as the preferred tenderer as they had the lowest Contract Price, slightly higher NPV, and scored significantly higher in the non-price evaluation. Unitywater considers that the solution proposed by Monadelphous is more robust with less risk and more opportunities to realise other cost savings than the solution proposed by Aquatec-Maxcon (Unitywater, 20 May 2011).

Five variations have been received, to date, from Monadelphous with four approved fully or partially. A contingency of 7% was allowed on the contract price, $775,366. The total value of approved variations, to date, is $80,531. The variations on this component of the project, to date, are within the allowed contingency.

A tender for the ‘Maleny Irrigated Forest Construction’ has been called for construction of the forest irrigation systems and distribution systems to support the revegetated forest and constructed wetland. Tenders for this contract closed on the 11th July 2013. The budget estimate for this contract is approximately $2 million (plus contingency).

According to the Project Schedule (Unitywater, 4 June 2013), the irrigation forest is not anticipated to be completed until September 2015 as the planting of will be completed in three stages over three separate years. As such the costs associated with this component of the project have not been assessed.

Based on the tender process selected for both the wetlands and treatment plant components of the project, and the negotiation and assessment undertaken, SKM finds that the project costs for these are in line with market conditions. Although not being assessed in this review, it is anticipated that the costs for the irrigated forest will be in line with market conditions at the conclusion of the tender evaluation process.

A.8 Efficiency gains

The negotiations and other activities undertaken by Unitywater in the tender phase resulted in a reduction of $1.62 million on the initial tender price submitted by Monadelphous. This is a reflection of the current market conditions with the strategy employed by Unitywater in this situation resulting in significant savings.

A.9 Implications for operating expenditure

The implications of the project for operating expenditure are not directly quantified in documentation provided however it is anticipated that the new plant and equipment would have lower operating costs than the current dated technology.

In addition, the project will result in a number of benefits resulting from the project. These include:

- Increased capacity to cater for population growth in the area, up until 2026
- Improved treatment standards
- Protection of the water supply catchment
- Minimised costs, by choosing the least whole-of-life cost option
- Environmental sustainability and a positive impact on the health and water quality of Obi Obi Creek
- The creation of a quality sustainable community space for residents
- The ability to supply recycled water to customers and local organisations such as Barung Landcare's nurseries and Maleny Golf Club's grounds
- Providing a quality sustainable community space for residents with walking tracks and the development of an environmental precinct with community planting zones
- Further protecting the environment
- Encouraging biodiversity which will attract and support wildlife

A.10 Policies and procedures

Table 80 below identifies how the project has complied with the appropriate policies and procedures.

Table 80 : C0028 Maleny STP Upgrade compliance with the Authority's criteria

Initiative	Achievement (Yes/No/Partial)	Comment
Consideration of prudency and efficiency of capital expenditure from a regional (whole-of-entity and whole-of-sector) perspective	Yes	The Treatment Services Strategy states that: *"Plans are in place for the upgrading of STP's in smaller self contained catchments of Woodford, Cooroy, Kenilworth and Maleny and detailed catchment diversion investigations are not carried out for these plants."* Although the Maleny STP was not considered in detail in the Treatment Services Strategy the transfer of the sewage to Landsborough STP was considered in the Business Case, and aligns with the findings of the Treatment Services Strategy.
Consideration of alternative investments, the substitution possibilities between operating costs and capital expenditure, and non-network alternatives such as demand management.	Yes	A number of options have been considered that take into account alternate strategies such as nutrient off setting
A standardised approach to cost estimating, including a standardised approach to estimates for items such as contingency, preliminary and general items, design fees and contractor margins, so that there is uniformity of cost estimating across all proposed major projects	Yes	A standard cost report has been provided for all three of Unitywater's STP project. This is used to forecast costs for completion, rather than for cost estimation, which is appropriate given the stage of the project.
A summary document to be prepared for identified major projects so as to facilitate standardised reporting	Yes	A Major Business Case was provided.
An implementation strategy to be developed for each major project	Yes	Significant Procurement Plan Approval Report – Maleny STP Upgrade – Early Tender Involvement (ETI) Process (Unitywater, August 2010)

Initiative	Achievement (Yes/No/Partial)	Comment
A 'toll gate' or 'gateway' review process to be implemented so that appropriate reviews are undertaken at milestone stages for selected projects	Yes	Gate 1: • Maleny STP Augmentation - Project Needs Analysis (Unitywater, undated) Gate 2: • Provision of Treatment Services to the Maleny Sewerage Service Area - Major Business Case (Unitywater, 23 May 2011) Gate 3: • Significant Procurement Plan Approval Report – Maleny STP Upgrade – Early Tender Involvement (ETI) Process (Unitywater, August 2010) • Contract Recommendation & Approval Report – UW002150 Maleny STP Upgrade Design and Construct (Unitywater, 20 May 2011)
Information on the compatibility with existing and adjacent infrastructure and consideration of modern engineering equivalents and technologies.	Yes	The consideration, and subsequent adoption, of effluent discharge to a forest irrigation area and wetland indicates consideration of modern engineering technologies.
Includes only commissioned capital expenditure from 1 July 2010 in the regulatory asset base (RAB) and therefore prices	No	Unitywater states that capital projects are added to the RAB on an as commissioned basis. Based on the information provided, it is not possible for SKM to make a clear determination as to whether the RAB only includes commissioned capital expenditure from 1 July 2010.

The documentation reviewed for this project is in line with Unitywater's Capital Works Planning Manual (eg Project Needs Analysis, Major Business Case, Contract Recommendation & Approval Report). This project has demonstrated no systemic deficiencies in Unitywater's overall policies and procedures.

A.11 Prudency and efficiency summary

The upgrade of the Maleny STP is considered prudent on the basis that the plant is currently under capacity and requires upgrade to meet current and future population projections.

SKM is satisfied that a range of options were adequately selected and reviewed and that the scope of works is appropriate to meet the project need. Whilst the use of recycled water for the local golf course and nurseries was identified, SKM accepts Unitywater's conclusion that the recycled water market is challenging, with users only wanting very low cost water periodically.

No barriers to the deliverability of this aspect have been identified except for potential rainfall periods that could delay the project schedule.

Based on the tender process selected for both the wetlands and treatment plant components of the project, and the negotiation and assessment undertaken, SKM found that the project costs for these are in line with market conditions. Although not being assessed in this review, it is anticipated that the costs for the irrigated forest will be in line with market conditions at the conclusion of the tender evaluation process. Overall, SKM found the project to be efficient.

A.12 Assessment of reported expenditure

Table 81 below identifies the proposed capital expenditure for C0028 Maleny STP Upgrade.

Table 81 : C0028 Maleny STP Upgrade proposed capital expenditure

Project	2013-14 ($'000)	2014-15 ($'000)	Total ($'000)
C0028 Maleny STP Upgrade	10,776	679	11,455
SKM proposed value	10,776	679	11,455
Variation (to QCA submitted value)	0	0	0

Note: Figures are “as incurred” expenditure and exclude any allowance for capital overhead or borrowing (interest) costs.

A.13 Extrapolation to other projects

It is not anticipated that the findings from this project can be extrapolated to other projects.

Appendix B. C0399 Suncoast sewerage scheme transfer system

B.1 Project description

The Suncoast STP is located on Finland Road, Pacific Paradise, on the western side of the Sunshine Motorway. The STP catchment includes central Marcoola through Twin Waters, also including Pacific Paradise, Mudjimba, and the airport and industrial estate. Treated effluent from the plant is discharged to the Maroochy River (downstream of the confluence with Coolum Creek and upstream of the confluence with Petrie Creek).

Augmentation of the sewage treatment/discharge system was needed in order to cater for population growth. The required augmentation of the Suncoast STP coincides with the need to also augment the Coolum STP (approximately 6 km to the north). Various options were identified and assessed considering linking both treatment plants and linking also with the Maroochydore STP (which has spare capacity). Currently, water quality in the Maroochy River estuary system does not meet water quality objectives (WQOs) for nitrogen and phosphorus.

The selected option was to mothball the Suncoast STP. The Suncoast STP Sewerage Transfer System will transfer the sewerage collected in the Suncoast catchment to the Maroochydore STP for treatment.

The project involves transfer of all Suncoast STP flows via a new transfer pumping station to Maroochydore STP via a 6.1 km pipeline, nominally DN560 HDPE pipe with an 820 m Horizontal Directional Drill (HDD) under the Maroochydore River. The Suncoast STP will be abandoned with the existing tanks used for emergency storage (Unitywater, 11 July 2013).

B.2 Proposed capital expenditure

Table 82 shows the proposed cost of the C0399 Sunshine Sewerage Scheme Transfer System within the 2013-15 budget.

Table 82 : C0399 Sunshine Sewerage Scheme Transfer System proposed capital expenditure as incurred ($'000s)

Source	Previous years ($'000)	2013-14 ($'000)	2014-15 ($'000)	Subsequent years ($'000)	2013-15 Total ($'000)
QCA Template[1]	3,741	5,761	-	-	5,761
RFI UW 01-06/04 Response[2]	4,417	5,647	1,048	-	6,696

[1] QCA Templates - UW 2013-15 Regulatory Submission.xls (Unitywater, 2013)

[2] 2013/15 Price Monitoring Review - Response to Request for Information – Unitywater Response – Suncoast Sewerage Transfer System (Unitywater, 11 July 2013)

Note: Figures are “as incurred” expenditure and exclude any allowance for capital overhead or borrowing (interest) costs.

For the period under review (2013-15) there is a difference of $934,612 between the expenditure outlined in the Authority’s Template, $5,761,523 and that outlined in the RFI UW 01-06/04 Response, $6,696,135. The reason for this difference has not been provided by Unitywater.

It is not possible to compare the total project cost for the two sources, as costs for previous years (prior to FY12-13) are not provided within the Authority’s template.

SKM is unsure whether Unitywater intends to commission the entire project in 2014-15 and subsequently add the entire cost of the project to the RAB in this financial year.

B.3 Documentation reviewed

The key reference documents used for this review are:

- QCA Templates - UW 2013-15 Regulatory Submission.xls (Unitywater, 2013)

- 2013/15 Price Monitoring Review – Response to Request for Information - Unitywater Response - Suncoast Sewerage Transfer System (Unitywater, 11 July 2013)
- *Coolum and Suncoast STP Augmentation Project Needs Analysis* (Unitywater, 4 February 2011)
- *Suncoast Sewage Treatment Plant Major Business Case* (Unitywater, October 2011)
- *Suncoast Diversion - Schedule Update* (Unitywater, 6 January 2012)
- *Suncoast - Final Design Report* (MWH, 25 August 2011)
- *Suncoast STP Closure - Transfer Rising Main Maroochy River Crossing Review Report* (Independent Civil Solutions Pty Ltd, 3 September 2012)
- Contract Recommendation and Approval Report (Unitywater, 20 May 2011)
- Suncoast Sewer and Water Cost Breakdown (Unitywater)
- *Specialist Audit Services - HDD (Bamser)* (Unitywater, 20 May 2011)
- *Suncoast Capital Works Committee Decision Paper v6* (Unitywater, 19 October 2011)
- Supplementary Information to Suncoast and Coolum STP Business Cases (Unitywater and MWH)
- Email Correspondence: Circular No. 31 – Suncoast STP Decommissioning and Construction of Associated Diversion Works to Maroochydore STP (Unitywater Water, 8 December 2011)
- Contract Recommendation and Approval Report UW002149 - C0816 (Unitywater, 20 May 2011)
- *C0399 Suncoast Cost Report* (Unitywater, July 2012)
- Suncoast OD560 Maroochy River HDD Peer Review (Aurecon, 12 June 2013)
- Treatment Services Strategy - Strategy Report (Unitywater, January 2013)
- Attachment 1- Capex Project Management Response (Unitywater, August 2013)

B.4 Key drivers

The primary cost drivers identified for this project are compliance and growth (Unitywater, 11 July 2013).

The drivers of compliance and growth are evidenced by the plant being beyond its hydraulic capacity and as a result it failing to comply with aspects of its licence conditions. In 2009 the dry weather licence flow limit was exceeded on 66 days, and the wet weather limit was exceeded once. However, the plant consistently met all discharge quality limits. (Unitywater, 4 February 2011) Furthermore, 109 flow based non-compliance events were recorded in the 2010/11 financial year. The majority of these events occurred on dry weather days due to the plant operating beyond its capacity. Unitywater has a legislative obligation to undertake corrective action to rectify these non-conformances in accordance with its commitments to the environmental regulator.

The Suncoast STP has a nominal hydraulic and biological capacity to serve 12,000 EP. Current population figures estimate that the Suncoast catchment contributes 15,000 EP to the STP (Unitywater, 11 July 2013).

The Suncoast STP is hydraulically constrained. At current peak inflow rates, some process units within the plant are close to overflow. Incoming flows continue to increase, therefore exacerbating hydraulic issues at the plant (Unitywater, 4 February 2011),

The Queensland Office of Economic and Statistical Research (OESR, formerly known as PIFU) and the Sunshine Coast Regional council (SCRC) predict the Suncoast catchment will continue to experience steady growth. Projections of approximately 30% growth in EP for the Suncoast catchment by 2031 are predicted.

Table 83 below shows the estimated demands of the Suncoast STP catchment.

Table 83 : Estimated Demands of the Suncoast STP Catchment

Year	Suncoast STP Catchment Estimated Demand (EP)
2006	15,200
2011	15,300
2016	18,200
2021	18,500
2026	18,500
2031	18,500

Following a review of these projections, Unitywater adopted 2031 as the design horizon for the Suncoast STP Sewerage Transfer System. This will provide capacity for 17 years of growth once the augmentation is commissioned, and is consistent with the Department of Infrastructure and Planning (DIP), Statutory Guidelines 2009. (Unitywater, 11 July 2013).

SKM finds the planning horizon of 17 years to be reasonable for this type of upgrade and notes that it generally aligns to the medium timeframes considered in the Treatment Strategy.

The Suncoast STP also operates under a licence for carrying out an 'environmentally relevant activity'. The licence allows the operation of a standard sewage treatment works having a peak design capacity to treat sewage of 10,000 to 50,000 EP. However flow discharged to the river outfall is limited to 3,500 kL on dry weather days and 10,500 kL on wet weather days (this is equivalent to a load from approximately 11,000 EP). (Unitywater, 4 February 2011).

SKM finds that closing the Suncoast STP is in line with the Treatment Services Strategy's objective of rationalisation of treatment plants within the service area. Suncoast is one of four plants planned to be closed in the medium term. The other plants identified are Coolum, Landsborough and Burpengary East STPs. SKM notes that it was also identified as being at greatest risk of flooding or inundation due to climate change. (Unitywater, January 2013)

Based on the adopted population projections the Suncoast STP is currently under capacity and so an upgrade or transfer of loads to an alternative catchment for treatment is required to meet current and future population projections.

B.5 The scope of works

B.5.1 Solutions development

A number of options were considered for the Suncoast Sewerage Scheme Transfer System.

In December 2010, Unitywater completed the Coolum and Suncoast STP Augmentation Assessment. The purpose of this document was to investigate options for the upgrade of the Coolum and Suncoast Treatment Plants. The assessment identified 33 different upgrade options that were subsequently reduced to seven following a comprehensive multi−criteria analysis. These seven options were analysed in more detail and the best options were identified in the Coolum and Suncoast Needs Analysis. The needs analysis recommended the investigation of these options in the business case, as well as a review of the impacts of an Inflow and Infiltration reduction strategy. (Unitywater, October 2011)

Of the seven options identified for review by the multi−criteria analysis, three options were specific to the Suncoast sewerage scheme transfer system. These options were investigated in the October 2011 Suncoast Sewage Treatment Plant Major Business Case, as well as the option of inflow and infiltration reduction. The options consisted of:

- Option 1 - Upgrade the existing plant and release effluent to the Maroochy River downstream of the existing discharge point, known locally as the "Cod Hole"

- Option 2 - Shutdown the Suncoast STP and transfer flows to Maroochydore STP
- Option 3 - No upgrade for Suncoast STP and partial transfer to Maroochydore STP
- Option 4 - Inflow and Infiltration reduction through sewer relining

Unitywater concluded that the implementation of a relining program in the Suncoast catchment would not have prevented existing license breaches, and that it was unlikely to prevent future breaches given forecast growth. Option 4 was therefore not included in the detailed option assessment as it was considered that the license conditions could not confidently be met. (Unitywater, October 2011)

Both cost and non-cost criteria were used to evaluate each of the options. Options 1 to 4 were assessed on a multi-criteria basis. The selection criteria and weightings used are given in Table 84 below.

Table 84 : Option Selection Criteria and Rating (Unitywater, 11 July 2013)

Grouping	Criteria Description	Weighting (%)
Technical Risk	Technical risk to the construction of the option	5
	Technical risk during operation of the option	10
Environment	Environmental disturbance during construction	5
	Environmental disturbance during operation	10
Social\Community	Social\community disturbance during construction	2.5
	Social\community disturbance during operation	2.5
Future Proofing	Flexibility of the solution	5
Cost	Capital cost	10
	Life Cycle Cost	50

Costs were calculated in 2011-12 dollars and were developed using cost estimates from independent estimators, current (at 2011) operating costs and comparison to current (at 2011) construction market rates.

The results of the costs analysis are provided in table below.

Table 85 : Options Cost Analysis

Rank	Upgrade Option	CAPEX today ($ M)	NPV 20 yrs @ 9.35% ($ M)
1	Option 1	30.0	35.3
2	Option 2	16.3	22.3
3	Option 3	11.4	22.5

This evaluation identified Option 2 and 3 as the likely solutions. A further sensitivity analysis was conducted by varying cost estimates according to major project risks and opportunities. The sensitivity analysis outcomes are shown in Table 86 below.

Table 86 : Sensitivity Analysis

Option	Likely Case ($ M)	Best Case ($ M)	Worst Case ($ M)
Option 2	22.3	20.6	24.4
Option 3	22.5	21.1	24.4

As the outcomes of the Sensitivity Analysis did not identify a clear recommendation a further multi−criteria analysis was completed to identify the preferred option. In developing its business case, Unitywater investigated the technical capacity of each option, which was used to prepare preliminary process designs. This information

was used to estimate the capital and operating costs of each solution. Risk assessments then highlighted significant non−financial risks and opportunities. This information was used in a multi−criteria analysis with key Unitywater stakeholders to determine the preferred option. The Unitywater standard enterprise financial model was used to calculate the life cycle cost of each option over a 20 year design horizon. The results showed that while Option 2 had a higher initial capital cost than Option 3, the ongoing operational costs associated with the closure of the Suncoast STP provide the lowest lifecycle cost.

The outcomes of the MCA are shown in Table 87 below.

Table 87 : MCA Outcomes

Option	Score
Option 1	565
Option 2	591
Option 3	589

On the basis of the Financial (NPV and Sensitivity Analysis) and Non-financial multi−criteria analysis factors Option 2 (the decommissioning the Suncoast STP and diversion of sewage to Maroochydore STP) was identified as the most prudent and efficient method of rectifying existing licence breaches and providing capacity for future growth forecasts.

The current scope of works includes:

- Construction of a pump station at Suncoast STP
- Rising main between Suncoast STP and the northern side of the Maroochy River
- Approximately 820m of DN500 HDPE sewerage pipeline under the Maroochy River, from the Maroochy Sports Complex to the cane fields on the Northern side of the river
- Associated pipework to from the Maroochy River to the Maroochydore STP

Whilst there are currently allocations for the construction of a new pump station, Unitywater is investigating the options of utilising some of the existing pump station infrastructure. Additionally, options are being considered for reuse of some of the tank infrastructure as emergency overflow abatement. (Unitywater, 11 July 2013)

Whilst SKM notes that the use of existing pump station was not considered during the earlier stages of the project, i.e. during the design phase, SKM recognises that this may have been due to assumptions regarding maintaining the operability of the STP during commissioning of the works.

At the time of this review, these investigations were ongoing. SKM recommends that these options continue to be investigated, including undertaking a financial analysis of reusing existing infrastructure. Where financially and technically viable, the existing infrastructure should be reused.

In summary, SKM is satisfied that an appropriate range of options was selected and adequately reviewed. SKM is satisfied that the scope of works is appropriate to meet the project need and supports use of existing infrastructure where appropriate.

B.5.2 Project delivery

The October 2011 Major Business Case stated that the selection of a procurement strategy for the works was performed in consultation with senior members of Asset Creation, Strategic Planning and Treatment Operations. This workshop was facilitated by MWH, and was held on 15 September, 2011.

Seven alternate delivery models were considered at the procurement strategy workshop. These delivery methods were:

- Design Bid Build (DBB)

- Design and Construct (D&C)
- Early Tenderer Involvement (ETI)
- Early Contractor Involvement (ECI)
- Engineering, Procurement, and Construction (EPC)
- Project Alliance (PA)
- Managing Contractor (MC)

Following appropriate introduction of the technical considerations influencing each key project element and after suitable dialogue and discussion within the procurement workshop, the analysis concluded the following recommended procurement option be adopted for the Suncoast Pump Station and Diversion: engage a DBB delivery strategy with specialised construction of the river crossing to be undertaken by a D&C process (Unitywater, October 2011)

Currently the project is being delivered in segments, with elements delivered by Unitywater's internal Construction Services team and external contractors. Specialist activities, such as the Horizontal Directional Drilling (HDD) are being completed by specialist contractors.

The modifications to the Maroochydore STP Inlet works (not part of the scope of this project) and associated pipework to the boundary of the HDD work were completed by Unitywater's internal Construction Services team. This work which mainly traversed the sporting field to the north of the Maroochydore STP had to be constructed in a short timeframe between the winter and summer sporting seasons to accommodate the sporting stakeholders. In order to meet this timeframe, this element of the construction was not tendered but allocated to the internal construction team. Construction Services did sub-contract a section which was completed by a horizontal bore contractor. SKM understands from the project program that these works were completed between February and July 2013.

Unitywater have purchased the pipe work and fittings under separate purchasing contacts. The procurement of pipe for this project was bundled with two other projects.

Public tenders were invited on 13 October 2012 for the HDD under the Maroochy River construction. The recommended tenderer was Coe Drilling Pty Ltd. Work was due to commence on site in July 2013.

Unitywater has commenced the tender process for the connections between the cross-river pipe works, north side of the Maroochy River HDD boundary and the boundary of the Suncoast STP. Unitywater aims to have this construction completed during the dry season (August – December) to limit any delays caused by wet weather. The construction is bundled with the Finland Road Pacific Paradise 600 Diameter Water Main asset replacement program to gain cost and construction advantages.

The construction of the transfer pump station at Suncoast is yet to be tendered. The project team is currently investigating the option of utilising the existing infrastructure at Suncoast STP instead of building a new pump station. The rising main will be initially used to transfer the effluent from Suncoast STP until the transfer pump station is constructed if that is the case.

In its Draft Report, SKM concluded that the delivery of this project was piecemeal, with limited documentation provided on the overall final delivery strategy. SKM accepts the use of a specialised contractor for the HDD portion of the works and notes the time constraints of traversing the sporting field. SKM also notes that this project is part of a wider scope of works including the Maroochydore STP Inlet works, which may have additional constraints which are outside of the scope of this review. In addition, SKM notes there have been attempts to package works, such as the procurement of the pipe and bundling construction with other works. However, this piecemeal approach has led to the works being constructed over a four year period and a more effective method of delivery for the entire project may have been possible if a shorter construction period had been targeted.

In response to this statement, Unitywater stated:

"The procurement methodology recommended in the Business Case (approved by the Board in December 2011) the construction of the transfer pumping station and associated rising main from the Suncoast STP to the Maroochydore STP as one package of works.

The drilling section of the project included a DN500 HDPE sewerage pipeline 820m in length under the Maroochy River from the Maroochy Sports Complex (corner of Fishermans Rd & Bradman Ave) to the cane fields on the Northern side of the river beyond Oyster Bank Road properties. This is a significant project with a high degree of complexity and risk, complicated by the soil conditions and geometry. The geometry adds further complexity in that it involves horizontal curves as well as vertical curves which increase the risk of failure and/or not achieving the required alignment. This is a technically complex component of the project requiring an experienced contractor that had the competency and experience to complete the works.

The other components of the overall project were deemed standard in terms of delivery and the competencies required by the contract to undertake. It was assessed that procuring the unique aspects of the project into one package would have created a poor value for money outcome for the business due to the following risks:

- *The package would be awarded to a tier 1 contractor who would likely subcontract out both the HDD component (high risk) and the open cut pipeline component (low risk);*
- *This would limit the ability of Unitywater to ensure the drilling contractor was suitably competent with both personnel and equipment to undertake such a significant drill under the Maroochy River;*
- *Add significant margin onto the project costs;*
- *A tier 1 contract is unlikely use local experienced pipeline contractors who would deliver the low risk component (open cut pipeline) of the project in a very cost efficient manner;*
- *Preference that the drilling contractor supplies the pipe and fitting to manage the risk;*
- *The drilling is not dependant on any other component of the works;*
- *Given the potential construction variability associated with drilling works of this nature the contract delivery method of a design and construct package was chosen to align some of the construction risks with the Contractor rather than Unitywater; and*
- *More difficult contract management with a tier one contractor and higher likelihood of variations.*

After assessing these risks, it was agreed to separate the HDD component of works from the overall package. This was supported by advice from Independent Civil Solutions Pty Ltd.

The pipeline section constructed on the southern side of the river had to be delivered as a separate package to meet the time constraints associated with the sporting seasons associated with the Maroochydore Sports Complex, and was delivered by the internal construction services group.

Tenders for the pipeline section on the northern section of the Maroochy River are currently being evaluated and will be awarded in early September 2013. This is being delivered separately to the pump station at the Suncoast STP site because of the availability of design.

The design of the pump station is still to be finalised. The other factor that was taken into consideration was that the pipeline sections that had to be constructed through the canefields ideally needs to be constructed in the "dry season" as the ground is particular bad after rain. The aim is to construct this section over the coming months before the summer wet season. The weather has less impact on the pump station construction."

As noted above, SKM accepts the use of a specialised contractor for the HDD portion of the works and notes the time constraints of traversing the sporting field. SKM also agrees with the latest information and supports the construction of pipeline across the cane fields in the "dry season". However, SKM still has concerns that the rising main has been built prior to the finalisation of the design of the pump station and believes that there may

have been efficiencies in packaging the pipework north of the river with the pump station. The reason for the delayed pump station design has not been explained.

B.6 Standards of service

Unitywater states that the sewerage scheme has been designed in accordance with the SEQ Water Supply and Sewerage Design and Construction Code.

The core of the SEQ Water Supply and Sewerage Design and Construction Code is based on National Codes, developed and copyrighted by the Water Services Association of Australia (WSAA).

The five core National Codes for the planning, design and construction of water supply and sewerage assets are:

- WSA 02-2002 Sewerage Code of Australia
- WSA 03-2011 Water Supply Code of Australia
- WSA 04-2005 Sewage Pumping Station Code of Australia
- WSA 06-2008 Vacuum Sewerage Code of Australia
- WSA 07-2007 Pressure Sewerage Code of Australia

The Sustainable Planning Act (2009) assigns precedence to the SEQ Water Supply and Sewerage Design and Construction Code over Council planning schemes to maintain the consistency of requirement across the region.

SKM considers that the standards used for this project are appropriate.

B.7 Project cost

The current approved budget, Gate 3 – approved February 2013, for the project is compared with the costs provided in the C0399 Suncoast Cost Report - June 2013 in Table 88.

Table 88 : Project Budget Summary

Item	Budget (Gate 3 - Approved February 2013)	C0399 Suncoast Cost Report - June 2013 (Final Forecast Cost)	Variation
Project Management (Activity Code 63)	$760,015	$849,026	-$89,011
Land/Authority/ Approvals (Activity Code 60)	$150,000	$41,702	$108,298
Design (Activity Code 61)	$1,444,362	$1,006,468	$437,894
Construction (Activity Code 62)	$7,107,937	$8,253,181	-$1,145,244
Commissioning (Activity Code 64)	$200,000	$200,000	$0
Contingencies (Activity Code 65)	$1,682,444	$512,500	$1,169,944
Planning		$251,193	-$251,193
Total Budget	**$11,344,759**	**$11,114,071**	**$230,688**

Table 88 shows that construction costs have increased, whilst the contingencies have decreased, as would be expected for any project over time. The June 2013 Final Forecast Cost is $230,000 less than the Gate 3 Budget.

Tenders for the construction of 820 meters of DN500 HDPE sewerage pipeline using HDD methods under the Maroochy River closed on 13 November 2012 with nine submissions received. (Unitywater, 11 July 2013)

The panel review of submissions addressed aspects of: relevant experience; competency; plant and equipment offered; methodology; and price submitted together with contractual and technical risks. Two tenderers were short listed and further evaluated through post tender clarifications and tender interview meetings. Based on the responses to post tender clarification queries the preferred and recommended tenderer was selected as Coe Drilling Pty Ltd. The contract was awarded to Coe Drilling Pty Ltd for the contract sum of $1,997,000 (including contingency). (Unitywater, 20 May 2011)

SKM concludes that the Suncoast Sewerage Scheme Transfer System works was procured after a robust tendering process and is satisfied that the costs for the HDD construction works under the Maroochy River are efficient.

An independent inspection service was also procured for the HDD as risk mitigation to Unitywater. HDD works under an environmentally sensitive area (Maroochy River) is inherently risky. Quotations were invited from two selected consultants. As the duration of the site audit contract would be dependent upon the main Suncoast HDD drilling contract progress and ability to maintain scheduled timeframes, the contract was considered as a schedule of rates contract with forecast site duration of five weeks. In general the core assessment criteria of track record and experience, methodology of project delivery and price submitted were reviewed with respect to each submission. The contract for the inspection service was awarded to Bamser Holdings Pty Ltd for the contract sum of $81,675.

Due to the specific nature of consulting services required for this work, SKM is satisfied that the invitation of only two specialist contractors for this work is appropriate.

Unitywater has purchased the pipe work and fittings under separate purchasing contacts. The procurement of pipe for this project was bundled with two other projects and public tenders were called for the combined quantity of pipe. The tender was advertised on 3 March 2012 and closed on 3 April 2012 and five submissions were received. The supply contract was awarded to Promain (Qld) Pty Ltd for the total sum of $2,221,368 (excluding GST). Of this total amount $1,128,840 was for the pipe for this project

SKM considers that the method of bundling pipes and fittings procurement with other projects has led to efficiency gains, though the value of these efficiency gains has not been quantified by Unitywater. SKM is satisfied with the tender process for the procurement of pipe works and fittings for this project.

Tenders are currently being evaluated for the connections between the cross-river pipe works, north side of the Maroochy River HDD boundary and the boundary of the Suncoast STP. Tender evaluations for this section have not been provided. Based on an approximate length of 3.6 km and DN560 HDPE, an allowance of $240.50/m of pipe (from the pipe supply contract) the estimated costs for this section are reasonable (within +/- 30%).

SKM notes that the reason given for the in-house completion of the pipework from the boundary of the HDD work (including traversing the sporting field) to the Maroochydore STP Inlet was the need to accommodate sporting stakeholders by completing the works between the winter and summer sporting seasons. Based on an approximate length of 1.3 km and DN560 HDPE, an allowance of $240.50/m of pipe (from the pipe supply contract) the costs for this section are low and therefore efficient.

A comparison of Unitywater and SKM estimated costs is shown below in Table 89.

Table 89 : Comparison of the Unitywater and SKM estimated costs

Element	Unitywater estimated value ($)	SKM estimated value ($)	Difference (%)
Pipes and Fittings	$1,180,373		
Service Centre + Sports Field	$876,410	$1,160,000 (including pipe supply)	
COE Drilling - HDD	$1,917,000	$1,600,000	

Element	Unitywater estimated value ($)	SKM estimated value ($)	Difference (%)
North of River - Sewer Only	$3,250,000	$3,200,000 (including pipe supply)	
Pump Station	$1,028,625	$1,100,000	
Total	**$8,253,181**	**$7,060,000**	**-14**

Overall, SKM is satisfied that the costs are in line with SKM's cost estimates. The determination of actual costs through a competitive market tendering process is appropriate.

The phasing of actual and forecast expenditure of the project are summarised in table below:

Table 90 : Project Expenditure Phasing ($)

Item	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Project Management	$49,850	$182,975	$207,127	$314,400	$94,685	$849,037
Planning Approvals	$0	$22,998	$18,704	$0	$0	$41,702
Design	$217,853	$712,956	$293,014	$33,860	$0	$1,257,683
Construction	$0	$837,393	$1,875,099	$4,914,157	$626,533	$8,253,182
Commissioning	$0	$0	$0	$0	$200,000	$200,000
Contingency	$0	$0	$0	$385,436	$127,064	$512,500
Totals	**$267,703**	**$1,756,322**	**$2,393,944**	**$5,647,853**	**$1,048,282**	**$11,114,104**

The June 2013 Final Forecast Cost for completion is $11,114,104, which is below the approved budget amount of $11,344,758.

A comparison of the project management, design and overhead costs with the totals from Unitywater's Capital Works Planning Manual is shown in Table 91.

Table 91 : Project Budget – comparison of project management, design and overhead costs

Item	C0399 Suncoast Cost Report - June 2013 (Final Forecast Cost)	Percentage of direct costs	Capital Works Delivery - Percentage of direct costs	Variation (Percentage change)
Project Management	$849,026	10.6	4.0	6.6
Land/Authority/ Approvals	$41,702	0.5	1.5	-1.0
Design[1]	$1,257,661	15.7	6.5	9.2
Contract management	$260,000	3.3	5.0	-1.7
Construction	$7,993,181			
Commissioning	$200,000	2.5	N/A	N/A
Contingencies	$512,500	6.4	N/A	N/A
Total Budget	**$11,114,071**	**39.0**	**17.0**	**6.0**

[1] Includes design

Using the percentages within Unitywater's Capital Works Planning Manual and including allowances for contingencies and commissioning, SKM's Draft Report recommended the following values be adopted.

Table 92 : Proposed reduction in project management, design and overhead costs

Item	C0399 Suncoast Cost Report - June 2013 (Final Forecast Cost)	Capital Works Delivery and assumed percentage of direct cost	Revised value	Variation
Project Management	$849,026	4.0	$319,727	
Land/Authority/ Approvals	$41,702	1.5	$119,898	
Design	$1,257,661	6.5	$519,557	
Contract management	$260,000	5.0	$399,659	
Commissioning	$200,000	2.5	$199,830	
Contingencies	$512,500	10.0	$799,318	
UW Capital Works Management	$0	0.5	$39,966	
Legal/marketing & others	$0	1.0	$79,932	
Total Budget	$3,120,890	29.5	$2,477,886	-$ 643,004

SKM's Draft Report noted that the design costs and the project management costs for this project are particularly high. The reason for this is likely to be the piecemeal delivery of this project and long construction period. The contingency for this project is low at 6.3%.

In response to SKM's Draft Report on the high project management and design costs, Unitywater stated:

> *"The Horizontal Directional Drilling under the Maroochy River Due added engineering complexity and significant risk to the Suncoast project. A Horizontal Directional Drilling project of this size (820 metres of DN500 PE pipeline) under a wide section of the Maroochy River is a large scale trenchless project which is not core work that is typically managed by Unitywater and is outside the skill set of internal staff. Unitywater typically manages open cut pipeline construction and small trenchless pipelines under creeks and roads.*
>
> *In order to mitigate the design and construction risks associated with this high risk activity, Unitywater engaged specialist consultants to provide a peer review of both the design and construction phases and provide specialist support (both technical advice and site supervision) during the construction phase.*
>
> *Unitywater engaged Independent Civil Solutions Pty Ltd (ICS) to carry out a desktop review of design documentation associated with the proposed construction of a sewage rising main under the Maroochy River (River Crossing). The purpose of this review was to provide comment on the suitability of this documentation for inclusion in tender documents for the construction of this rising main using Horizontal Directional Drilling. Specifically this review and report provided comment on:*
>
> *a) The design that has been carried out by Unitywater's design consultant, MWH;*
>
> *b) The methodology report also provided by MWH;*
>
> *c) The geotechnical investigation and report carried out by Douglas and Partners;*
>
> *d) The pipeline material and class proposed; and*
>
> e) *Alternative contracting strategies for procurement of the construction.*
>
> *Independent Civil Solutions Pty Ltd (ICS) has been retained during the construction phase to provide specialist technical advice as required. Bamser Holdings Pty Ltd was also engaged to provide specialist site auditing of the construction works associated with the Suncoast HDD contract."*

SKM acknowledges that a HDD project of this size is significantly risky and not within the scope of works typically undertaken by Unitywater. Therefore SKM accepts that there is a justifiable reason for the higher

design costs to undertake an independent review of the design. However, SKM believe that there would have been efficiencies generated through minimising the number of separate packages of work.

In addition, Unitywater states that:

> *"The project management costs included a component allowing for overheads (UW Capital Works Management) of $443.5k (natural account code 255009). Whilst these costs are still allocated under project management the forecast has been reduced in the latest forecast. Some of the contract management costs were also incorrectly booked against project management and have been reassigned to construction.*
>
> *The total design costs included all the planning costs associated with the project prior to the project being approved by Unitywater Board. This included significant costs associated with the development of the Business Case.*
>
> *An updated cost report based on end of August 2013 figures is provided* [shown in Table 91 : . *This provides an update to the project management and design costs with a reallocation of the costs detailed above against their correct category.*
>
> *It should be noted that the figures assumed in Table 91 : of the report are not consistent with the latest Cost Estimating Tool Guidelines – April 2013. The following percentages should be applied –*
>
> - *Project Management – 6%*
> - *UW Capital Works Management – 4%*
> - *Design – 6%"*

SKM has not been provided with the updated Cost Estimating Tool Guidelines, so it is not possible to verify these percentages and whether other percentages have remained constant.

SKM also notes that in the August 2013 cost report the overall cost of the Final Forecast Cost has increased to the full approved budget amount of $11,344,758.

Using the revised values above, SKM has recalculated the project management, design and overhead costs.

Table 93 : Proposed reduction in project management, design and overhead costs

Item	C0399 Suncoast Cost Report - August 2013 (Final Forecast Cost)	Revised Capital Works Delivery and assumed percentage of direct cost	Revised value	Variation
Construction	$8,165,270		$7,993,181	
Project Management	$694,529	6.0%	$489,916	
Land/Authority/ Approvals	$65,702	1.5%	$122,479	
Design	$810,053	6.0%	$489,916	
Contract management	$20,000	5.0%	$408,264	
Commissioning	$200,000	2.5%	$204,132	
Contingencies	$866,573	10.0%	$816,527	
Planning	$522,630	0.0%	$0	
UW Capital Works Management	$0	4.0%	$326,611	
Legal/marketing & others	$0	1.0%	$81,653	
Total Budget	**$11,344,757**	**31.0%**	**$10,932,678**	**-$412,079**

SKM recommends that the total of $10.93 million for this project be incorporated into the Authority's cost model.

B.8 Efficiency gains

Efficiency gains were obtained through the bundling of pipe work and fittings procurement for three different projects into one procurement contract. The value of efficiency gains has not been quantified by Unitywater.

B.9 Implications for operating expenditure

The implications of the project for operating expenditure are not directly quantified in documentation provided however it is anticipated that the sewerage scheme would have increased pumping to Maroochydore STP but reduced operating costs for Suncoast STP.

In addition, the project will result in a number of benefits. These include:

Direct financial benefits:

- Mitigates the potential for fines and/or litigation from Department Of Environment and Heritage Protection
- Reduces the number of treatment plants and reduces the treatment plant operating costs
- Increases treatment capacity, which supports a larger customer base that will provide increased annual sewerage charges revenue

Direct non−financial benefits:

- Provides infrastructure that meets forecast growth in the catchment
- Provides an effective upgrade option that improves flexibility with minimal risk
- Reduces the total nutrient load on the Maroochy River, improves water quality and river health
- Indirect benefits of completing the Suncoast SW Upgrade
- Improved customer satisfaction with fewer customer complaints
- Organisational image is improved by reducing nutrient discharges to the river, which contribute to an improvement in the health of the Maroochy River

SKM accepts that the above financial and non-financial benefits will be achieved by the project. SKM expects to see a corresponding decrease in the operating costs for Suncoast STP

B.10 Policies and procedures

Table 94 below identifies how the project has complied with the appropriate policies and procedures.

Table 94 : C0399 Suncoast Sewerage Scheme Transfer System compliance with the Authority's criteria

Initiative	Achievement (Yes/No/Partial)	Comment
Consideration of prudency and efficiency of capital expenditure from a regional (whole-of-entity and whole-of-sector) perspective	Yes	Transfer between catchments – Suncoast and Coolum.
Consideration of alternative investments, the substitution possibilities between operating costs and capital expenditure, and non-network alternatives such as demand management.	Yes	A number of options have been considered that take into account alternate strategies such as the implementation of a relining program
A standardised approach to cost estimating, including a standardised approach to estimates for items such as contingency, preliminary and general items, design fees and contractor margins, so that there is uniformity of cost estimating across all proposed major projects	Yes	As this project is in construction, a cost forecast has been provided. This follows a Unitywater standard.

Initiative	Achievement (Yes/No/Partial)	Comment
A summary document to be prepared for identified major projects so as to facilitate standardised reporting	Yes	A Major Business Case was provided.
An implementation strategy to be developed for each major project	Partial	The delivery strategy was documented in the business case. However, no documentation has been provided on the revised delivery strategy.
A 'toll gate' or 'gateway' review process to be implemented so that appropriate reviews are undertaken at milestone stages for selected projects	Yes	Gate 1: • Coolum and Suncoast STP Augmentation Project Needs Analysis (Unitywater, 4 February 2011) Gate 2: • Suncoast Sewage Treatment Plant Major Business Case (Unitywater, October 2011) • Suncoast - Final Design Report (MWH, 25 August 2011) • Suncoast STP Closure - Transfer Rising Main Maroochy River Crossing Review Report (Independent Civil Solutions Pty Ltd, 3 September 2012) Gate 3: • Contract Recommendation and Approval Report - Suncoast HDD Maroochy River Crossing (Unitywater, 20 May 2011)
Information on the compatibility with existing and adjacent infrastructure and consideration of modern engineering equivalents and technologies.	Yes	Use of existing infrastructure (storage tanks and pump station).
Includes only commissioned capital expenditure from 1 July 2010 in the regulatory asset base (RAB) and therefore prices	No	It is unclear when the capital expenditure will be added to the RAB. SKM recommends that this occurs on completion of the final stage of the rising main.

The documentation reviewed for this project is in line with Unitywater's capital delivery processes (eg Project Needs Analysis, Major Business Case, Contract Recommendation and Approval Reports).

This project has demonstrated no systematic deficiencies in Unitywater's overall policies and procedures.

B.11 Prudency and efficiency

Based on the adopted population projections, the Suncoast STP is currently under capacity and so an augmentation or transfer of loadings is required to meet current and future population projections.

SKM is satisfied that an appropriate range of options was selected and adequately reviewed. As such, the scope of works is appropriate to meet the project need.

SKM considers that the standards used for this project are appropriate.

The project is to be delivered in four key parts. SKM accepts the use of a specialised contractor for the HDD portion of the works and notes the time constraints of traversing the sporting field. SKM also supports the construction of pipeline across the cane fields in the "dry season". In addition, SKM notes there have been attempts to package works, such as the procurement of the pipe and bundling construction with other works. However, SKM still has concerns that the rising main has been built prior to the finalisation of the design of the pump station and believes that there may have been efficiencies in packaging the pipework north of the river with the pump station.

SKM is satisfied with the robust tendering processes for the procurement of HDD services and pipework and fittings.

The costs for the works completed in-house by Unitywater have been reviewed and have found to be low and are therefore efficient.

The cost estimates for the currently tendered works and the pump station provided by Unitywater have been reviewed and are found to be efficient.

Whilst it is noted that the design costs and the project management costs for this project are particularly high, this project has a number of particular technical challenges, including a long directional drill under the Maroochy River. SKM recommends a minor reduction to bring the costs in line with Unitywater's Capital Works Planning Manual.

The current project costs have been revised. SKM recommends the revised forecast cost of approximately $10.93 million be incorporated into the Authority's cost model for this project.

Overall, SKM finds the project to be prudent but not efficient.

B.12 Assessment of reported expenditure

Table 95 below identifies the proposed capital expenditure for the C0399 Suncoast Sewerage Scheme Transfer System project. The capital expenditure has been reduced to reflect the updated project costs.

SKM has struggled to reconcile the values submitted to the Authority to the values in the supporting documentation. This is due to limited information provided on expenditure in previous years in the supplied template (QCA Template – UW 2013-15 Regulatory Submission, 5.6.2 Supplementary only provides expenditure from FY 12-13).

As SKM's estimated value of remaining work is higher than the value originally submitted by Unitywater, SKM suggests that the lower number be adopted until the variation can be resolved. SKM recommends that the Authority reviews this value when Unitywater's revised templates are received, and make appropriate adjustments to cap the total project costs to $10.93 million.

Table 95 : C0399 Suncoast Sewerage Scheme Transfer System proposed capital expenditure

Project	Previous years ($'000)	2013-14 ($'000)	2014-15 ($'000)	2013-15 Total ($'000)
C0399 Suncoast Sewerage Scheme Transfer System[1]	3,741[3]	5,761	-	5,761
RFI UW 01-06/04 Response[2]	4,417	5,647	1,048	6,695
SKM proposed value	-	5,761	-	5,761
Variation (to QCA submitted value)	-	-	-	-
Variation (to Unitywater RFI value)	-	114	-1,048	-934

[1] QCA Templates - UW 2013-15 Regulatory Submission.xls (Unitywater, 2013)

[2] 2013/15 Price Monitoring Review - Response to Request for Information – Unitywater Response – Suncoast Sewerage Transfer System (Unitywater, 11 July 2013)

[3] Includes values from FY 12-13 only.

Note: Figures are "as incurred" expenditure and exclude any allowance for capital overhead or borrowing (interest) costs.

B.13 Extrapolation to other projects

It is not anticipated that the findings from this report can be extrapolated to other projects.

Appendix C. C0886 Coolum STP upgrade – inlet works

C.1 Project description

The Coolum STP was constructed in 1978. The original construction included the current inlet works screening and grit removal facilities, and was last upgraded in 1997. The inlet works has been assessed as operating at its hydraulic capacity. The current inlet works does not have a wet weather bypass, resulting in all flows traversing through the biological treatment process during wet weather events.

The project is being delivered through two separate construction packages. The first package involves the supply and commissioning of the mechanical equipment for the inlet works, and the second package involves the civil construction component of the inlet works.

Package one was tendered and subsequently awarded to VoR Environmental Pty Ltd in May 2013. The tender for package two closed on 18 June 2013 and is currently being evaluated.

C.2 Proposed capital expenditure

Table 96 shows the proposed cost of the Coolum STP Upgrade – Inlet Works Project within the 2013/15 budget.

Table 96 : Coolum STP Upgrade – Inlet Works Project proposed capital expenditure as incurred ($'000s)

Source	Previous years ($'000)	2013-14 ($'000)	2014-15 ($'000)	2013-15 Total ($'000)	Total ($'000)
QCA Template[1]	-	5,525	-	5,525	5,525
Attachment F – Coolum Inlet Works Cost Report May 2013	558	4,684	-	4,684	5,242
RFI UW 01-06 Response[3]	829	4,698	-	4,698	5,527

[1] QCA Templates - UW 2013-15 Regulatory Submission.xls (Unitywater, 2013)

[2] Coolum Inlet Works Program – May 2013, Unitywater, May 2013 (Unitywater, May 2013)

[3] 2013/15 Price Monitoring Review - Request for Information – Unitywater Response Coolum STP Inlet Works C0886 (Unitywater, July 2013)

The total project expenditure outlined in the QCA Template, $5,524,925, and the total outlined in the RFI UW 01-06/05 Response, $5,527,923, are comparable.

C.3 Documentation reviewed

The key reference documents used for this review are:

- *QCA Templates - UW 2013-15 Regulatory Submission.xls*, Unitywater, June 2013 (Unitywater, 2013)
- 2013/15 Price Monitoring Review - Request for Information – Unitywater Response Coolum STP Inlet Works C0886, Unitywater, V01, July 2013 (Unitywater, July 2013)
- *Coolum and Suncoast STP Augmentation Project Needs Analysis*, Unitywater, Revision E, February 2011 (Unitywater, February 2011)
- *Coolum Sewage Treatment Plant Major Business Case January 2012*, Unitywater, Version 8, January 2012 (Unitywater, January 2012)
- *Coolum Sewage Treatment Plant Business Case Modification – April 2012*, Unitywater, March 2012 (Unitywater, March 2012)
- *Coolum Inlet Works Program – June 2013*, Unitywater, July 2013 (Unitywater, July 2013)

- *Major Projects Gateway Process,* Date Unknown (Unitywater)
- *Coolum Inlet Works Program – May 2013*, Unitywater, May 2013 (Unitywater, May 2013)
- Variation Request and Approval Form (to Kawana/Maroochydore EPCM) to engage CH2MHill as EPCM consultant - May 2012, Unitywater, May 2012 (Unitywater, May 2012)
- *Contract Recommendation Report – Supply and Commission of Inlet Works Equipment – Coolum STP*, Unitywater, Revision 2, April 2013 (Unitywater, April 2013)
- *Design layout drawing*, Unitywater, Revision A, April 2013 (Unitywater, April 2013)
- *Significant Procurement Plan and Capital Works Committee Approval*, Unitywater, June 2012 (Unitywater, June 2012)
- Contract Recommendation & Approval Report – Kawana & Maroochydore STP – Optimisation (EPCM Contract), Unitywater, Revision 0, 15 March 2012 (Unitywater, March 2012)
- *Variations to Capital Works Contracts Procedure*, Unitywater, Revision 3, 25 August 2011 (Unitywater, August 2011)
- *Coolum Sewage Treatment Plant – Inlet Works Upgrade – Concept Design Report*, CH2MHill, Revision V1, July 2013 (CH2MHill, July 2013)
- Contract Recommendation and Approval – Coolum STP Inlet Works Upgrade (Unitywater, July 2013)

C.4 Key drivers

The primary cost driver for this project is growth (Unitywater, 2013) however drivers of renewals, improvement and compliance are also of relevance.

At a high level, Unitywater states the key drivers for the project as:

- Upgrade to cater for forecast population growth and to allow for commission of a recently built rising main
- Renewal to replace current assets in poor condition and which have reached the end of their useful life
- Improvement of service levels through new infrastructure
- Environmental compliance (Unitywater, July 2013)

The drivers of compliance and growth are evidenced by the plant being beyond its design capacity and as a result failing to comply with aspects of its license conditions. The current Coolum STP consists of a ‘stage 1’ plant with a treatment capacity suitable to 10,000 EP and a ‘stage 2’ plant with a treatment capacity suitable to 15,000 EP, giving a total design capacity of 25,000 EP. The current Coolum STP catchment is estimated to contribute approximately 26,000 EP, which is in excess of the STP’s design capacity. This is supported by the fact that the STP occasionally breaches its licence condition for dry weather flow (Unitywater, February 2011) The STP has recorded 31 flow based non-compliance events in the 2010/11 financial year (Unitywater, March 2012).

Unitywater states that the Office of Economic and Statistical Research (OESR) and Sunshine Coast Regional Council (SCRC) predict that the Sunshine Coast region will continue to experience steady growth. While the OESR and SCRC use different forecasting techniques, they are consistent in their estimation of population for the Sunshine Coast Region in 2031. Unitywater adopted the SCRC forecast as it used a lot-based methodology which considered a number of local factors, while the OESR forecasting technique was more regionally focused and based on broad hectare analysis. Following a review of these projections, Unitywater adopted 2031 as the design horizon for the Coolum STP augmentation. With a planned commission date of 2014, this would provide capacity for 17 years of growth. (Unitywater, March 2012).

SKM accepts that a 17 year planning horizon is reasonable given the projected population growth.

Unitywater's Major Business Case adopted a 2031 design population of 35,000 EP and as such, the planned augmentation of the Coolum STP has a nominal design capacity of 35,000 EP. The Inlet Works design is to the nominal design capacity of 35,000 EP. (Unitywater, July 2013).

Figure 6-2 : Coolum STP: Growth in equivalent persons over time (Unitywater, March 2012)

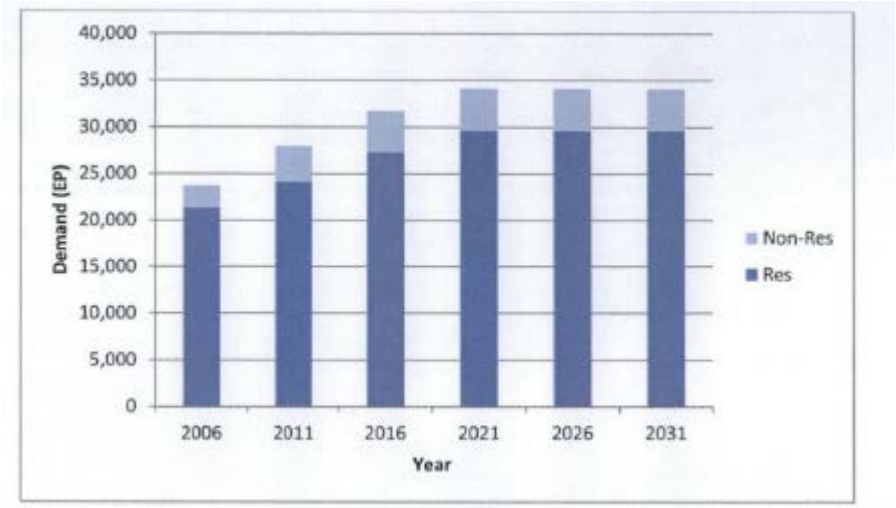


Figure 1-2 : Coolum STP: Growth in equivalent persons over time

In April 2012 Unitywater modified the Major Business Case of the Coolum STP project, bringing forward elements of the augmentation; specifically, the development of a new inlet works. The modified business case recommended that the construction of a new inlet works be brought forward five years to minimise overflows in the sewerage network (Unitywater, July 2013).

The reason behind the revision of the business case was that during the planning process the Strategic Planning Section failed to identify issues in the network that would constrain the deferral of the treatment plant augmentation as proposed in the recommended option. In 2011 Unitywater constructed a new rising main that increased the discharge capacity of the network to the STP. This was necessary to provide the requisite standard of service (i.e. the capacity to pump up to five times average dry weather flow in wet weather events and thereby mitigate the incidence of wet weather overflows) for existing and future populations in the catchment of sewage pumping station CLM 099. This pumping station has overflowed ten times since January 2012, at the time of the modification of the Major Business Case (Unitywater, 2013). However, the new rising main was unable to be commissioned due to insufficient hydraulic capacity in the STP inlet works to pass such flows. Consequently, the business case was amended to include provision for the immediate upgrade of the inlet works to enable commissioning of the new rising main, with the intent being to provide capacity for wet weather flows, and the reduction of wet weather sewage overflows in the sewerage network. (Unitywater, March 2012)

SKM considers that the driver of renewals is relevant as the condition of the existing structure is poor as a result of hydrogen sulphide corrosion, and the existing screening and grit removal mechanical equipment is beyond its useful life achieving poor screenings and grit removal from the incoming sewage. (Unitywater, July 2013)

The plant is not yet overloaded biologically, and is able to meet the licensed water quality requirements. However, the Environmentally Relevant Activity (ERA) Licence requirements for the plant, while allowing for the operation of a standard sewage treatment works having a peak design capacity to treat sewage of 10,000 to 50,000 EPs, only allows for 8,250 kL on dry weather days and 24,750 kL on wet weather days of flow discharged to the river outfall. Unitywater states that this is equivalent to a load from approximately 25,000 EP (Unitywater, February 2011). The assumptions used to calculate this equivalent load, including any peaking factors used, have not been provided. As such SKM is unable to verify this figure.

The current Coolum STP does not have a wet weather bypass, so all flow pumped to the plant from the network must pass through the inlet works and the biological treatment process. This causes contamination in the effluent lagoon, making this water not suitable for reuse until it is further treated. A bypass facility will be built into the inlet works, which will screen and de-grit any influent before release via the bypass. The program also forms part of the program of improvement works outlined to the then Department of Environment and Resource Management (now the Department of Environment and Heritage Protection) in response to the concerns of poor operations of the Sunshine Coast Sewerage Treatment Facilities (Unitywater, July 2013).

C.5 The scope of works

C.5.1 Solutions development

In December 2010, Unitywater completed the Coolum and Suncoast STP Augmentation Assessment. The purpose of this document was to investigate options for the upgrade of the Coolum and Suncoast Treatment Plants. The assessment identified 33 different upgrade options that were assessed in a comprehensive multi−criteria analysis. In February 2011 Unitywater completed the Coolum and Suncoast Needs Analysis which recommended the augmentation of the Coolum and Suncoast STPs and the preparation of a business case to identify the preferred augmentation option. The options considered in the business case for the Coolum STP upgrade are briefly described below. (Unitywater, January 2012)

- Option 1 - Upgrade the existing STP
- Option 2 - Upgrade the existing STP and discharge the effluent via a 16.5 ha treatment wetland
- Option 3 - Upgrade the existing STP to a Total Nitrogen (TN)2:Total Phosphorous (TP)1 (2mg/L total nitrogen and 1mg/L total phosphorous) treatment standard
- Option 4 - Construct a small-scale demonstration wetland to determine actual wetland nutrient removal performance
- Option 5 - Avoid an augmentation by implementing an Inflow and Infiltration reduction strategy (Unitywater, July 2013)

Unitywater concluded that the implementation of a relining program in the Coolum catchment to address inflow/infiltration issues would not have prevented existing license breaches, and that it was unlikely to prevent future breaches given forecast growth. Option 5 was therefore not considered in the option assessment as it was considered that the license conditions could not confidently be met (Unitywater, January 2012).

Option 4 was revised in the 2012 modified business case to include:

a) Increase the scope of works to include the immediate construction of a new inlet works to minimise the frequency of wet weather overflows in the network

b) Include land purchase costs for the future 10.5 ha wetland (to be consistent with the land purchase costs included in Option 2)

Options 1 to 4 were assessed on a multi-criteria basis. The selection criteria and weightings used are given in Table 97 below:

Table 97 : Coolum STP Upgrade – Option Selection Criteria and Weighting

Grouping	Criteria Description	Weighting (%)
Technical Risk	Technical risk to the construction of the option	5
	Technical risk during operation of the option	10
Environment	Environmental disturbance during construction	5
	Environmental disturbance during operation	10
Social\Community	Social\community disturbance during construction	2.5
	Social\community disturbance during operation	2.5

Grouping	Criteria Description	Weighting (%)
Future Proofing	Flexibility of the solution	5
Cost	Capital cost	10
	Life Cycle Cost	50

SKM is of the opinion that these weightings are reasonable and appropriate for the option study.

A revised investment evaluation was completed for Option 4 in the modified business case. The revised investment evaluation was based on the standard discounted cash flow methodology, utilised in the original major business case, and compared life-cycle costs (both capital and operating costs) for each option up to and including 2031.

Costs were calculated in 2011-12 dollars and were developed using cost estimates from independent estimators, cost estimates from the consultant MWH, comparison to current construction market rates, comparison to similar projects undertaken in the South East Queensland region and other similar sewage treatment plant upgrade work undertaken by Unitywater (Unitywater, January 2012).

Table 98 presents a summary of the cost and over-all multi-criteria analysis in the original major business case (prior to the revision of Option 4):

Table 98 : Coolum STP Upgrade – Original Option Analysis

Upgrade Option	Total Project Capital Expenditure ($ M)	NPV ($ M)	Financial Ranking	Multi-criteria analysis (MCA)	Overall project Ranking
Option 1	45.3	53.2	3	571	3
Option 2	46.0	55.1	4	501	4
Option 3	44.4	52.0	2	578	2
Option 4	37.5	39.8	1	587	1

Option 4 had the lowest capital cost and NPV of all options considered in the option analysis, as well as the highest MCA ranking. (Unitywater, January 2012)

Table 99 presents a summary of the cost and over-all multi-criteria analysis in the modified major business case (after the revision of Option 4):

Table 99 : Coolum STP Upgrade – Modified Option Analysis

Upgrade Option	Total Project Capital Expenditure ($ M)	NPV ($ M)	Financial Ranking	Multi-criteria analysis (MCA)	Overall project Ranking
Option 1	45.3	53.2	3	575	3
Option 2	46.0	55.1	4	504	4
Option 3	44.4	52.0	2	581	2
Option 4	37.3	41.9	1	587	1

Following the revision of option 4, option 4 had still had the lowest capital cost and NPV of each option in the option analysis, as well as the highest MCA ranking, and was adopted as the preferred option (Unitywater, March 2012).

The overall scope of work for the project involved three stages:

- Stage 1 – Demonstration wetland
- Stage 2 – New inlet works and bypass
- Stage 3 – Future STP augmentation and treatment wetland.

Stage 2 is the element of the overall project which has been selected for review by the Authority.

The overall scope of work for stage 2 of the preferred option will be delivered in two separate construction packages and includes:

- Package 1 - mechanical equipment for the inlet works
  - Inlet band screens
  - Sluicing launders
  - Wash presses
  - Grit removal equipment
  - Grit Classifier
- Package 2 - civil construction of the inlet works and the bypass pipe-work (Unitywater, July 2013)

SKM is satisfied that an appropriate range of options were adequately selected and reviewed including consideration of network fixes.

An Australian Water Association technical presentation was given by Unitywater representatives on 7 August 2013, relating to the Unitywater Treatment Services Strategy. During this presentation, it was stated that the Unitywater Treatment Services Strategy involves the decommissioning of the Coolum STP within the 2018-2021 timeframe. This is supported by the Treatment Service Strategy (Unitywater, January 2013). This project was developed prior to the outcomes of the Treatment Service Strategy and it would be unreasonable for Unitywater to have foreseen the outcomes of this strategy.

SKM has considered the impact of the long term plan to decommission the Coolum STP on the scope of work. However, as the works are required to reduce the number of licence non-compliances and to allow for commissioning of a recently built rising main to prevent overflows in the network, and the current growth forecast shows that population will reach nearly 35,000 EP by 2021, SKM finds the scope of work still to be prudent.

C.5.2 Project delivery

The selection of a procurement strategy for the works was performed in consultation with senior members of Asset Creation, Strategic Planning and Treatment Plants Branches. Given the staged approach to the augmentation each stage has been considered independently.

Design and Construct (D&C), Design Bid Build (DBB) and Engineering Procurement and Construction Management (EPCM) strategies were considered for the design and construction of the new Coolum STP inlet works. A procurement analysis highlighted that the D&C process was unlikely to adequately address the impacts of the new inlet works on the network, and that the DBB would have the longest procurement time. The analysis suggested that an EPCM contract approach would mitigate both these risks and highlighted that it had already been adopted for the Kawana STP Inlet Works. The modified major business case subsequently recommended an investigation into the use of the existing Kawana EPCM contract for the Stage 2 Inlet Works. (Unitywater, March 2012)

Unitywater invited CH2MHill to submit a price for a variation to their current Kawana and Maroochydore EPCM contract, which was awarded following an open tender procedure, to undertake preliminary and detailed design, tender support and construction supervision services for the upgrade of inlet works and provision of a new wet-weather bypass at Coolum STP. Unitywater states that the adoption of this process has the following benefits:

- Consolidates these works into an existing contract and minimises Unitywater's Project Management and Supervisory costs
- Reduces delivery timeframes and costs associated with a separate tender process
- Has a higher potential to reduce capital costs by combining with other similar works and delivers economies of scale

The variation for CH2MHill Engagement was approved by the Unitywater Capital Works Committee on 27 June 2012. The variation was made in line with Unitywater's Procedure "*Variation to Capital Works Contract Procedure*". (Unitywater, 2013)

CH2MHill has completed the concept design and called tenders. (Unitywater, July 2013).

The construction of the new inlet works has been split up into a mechanical supply and commission contract and a separate civil and electrical contract for the inlet works construction. This allowed Unitywater to select the best value for money mechanical equipment without being restricted to equipment selected by the civil works contractor.

Package one, the mechanical supply and commission contract was publicly advertised in the Queensland Government Marketplace (eTender) on 15 February 2013. Tenders closed on 7 March 2013 and six submissions were received from six tenderers.

A 'weighted attribute' tender evaluation was carried out and each tender was assessed on both price and non-price attributes. An evaluation of the tenders was undertaken using the following criteria:

Table 100 : Coolum STP Upgrade – Package One Tender Criteria

Criteria	Weighting (%)
Track record/experience	15
Project delivery method	30
Safety and environment	5
Price	50
Total	**100**

SKM believes these weightings are appropriate and in line with good practice.

An initial evaluation panel meeting occurred on the 18 March 2013, at which the tabulated process capability spreadsheet was discussed, as well as feedback from the references contacted. After initial evaluation scoring, there was a significant difference in the scoring between the six tenderers. As the first two tenderers' scores were much higher than the third and fourth, a major outcome of the first evaluation panel meeting was to concentrate on the two leading tenderers.

After site visits to various sites to inspect equipment by the leading tenderers, a second evaluation panel meeting was held, where the scoring was refined to include responses from Tender Clarification Requests and site visits.

A third and final evaluation panel meeting was held on the 10 April 2013, at which the scores were refined. Table 101 below provides a summary of the final evaluation scores and ranking of the six tenderers:

Table 101 : Coolum STP Upgrade – Package One Final Tenderer Scores (Unitywater, April 2013)

Ranking	Contractor	Technical Score	Price Score	Overall Score
1	VoR Environmental Australia Pty Ltd	41.18	50.00	91.18
2	Hydroflux Pty Ltd	42.46	46.31	88.76

Ranking	Contractor	Technical Score	Price Score	Overall Score
3	Spirac Pty Ltd	45.69	42.52	88.20
4	Green Process	47.92	37.28	85.20
5	Ovivo Australia Pty Ltd	50.00	33.30	83.30
6	Johnson Screens (Australia) Pty Ltd	40.10	28.64	68.73

Package one was subsequently awarded to VoR Environmental Pty Ltd in May 2013. SKM considers, from its analysis of the approach to tendering, that a robust tender process was undertaken for the package one works.

Unitywater recently called tenders for the second package of works for the civil construction component of the Inlet works. This package includes the inlet works as well as the bypass pipe-work. This tender closed on 18 June 2013. The civil contractor will be required to mount the mechanical infrastructure and will be responsible for the electrical installation, programming and commissioning of the package. The mechanical infrastructure will be free issued to the civil contractor from Unitywater. (Unitywater, July 2013)

Following the issue of SKM's draft report, the tender evaluation for the civil construction has been provided to SKM. Five tenders were received. The tenders were assessed against suitable evaluation criteria including cost (55%). Unitywater undertook a tender negotiation with the short listed tenders. Based on the outcome of the tender negotiations, Cockram Construction Limited, the lowest cost tender, was awarded the tender with a price of $3.40 million. This price is within the budgeted amount for civil construction.

SKM is satisfied that a robust tendering process has been undertaken and that the costs for the civil construction are in line with market conditions and therefore efficient.

No barriers to the deliverability of this project have been identified. Practical completion is due to occur in February 2014.

C.6 Standards of service

The July 2013 Concept Design Report stipulates a design peak instantaneous flow for the new inlet works facility of 650 L/s. This design flow has been built up from:

- A design peak instantaneous flow to be delivered to the plant of 591.6 L/s
- An allowance of 40 L/s for potential over-sizing of pump upgrades
- An allowance of 20 L/s for flows from a small general purpose pumping station which discharges directly into the inlet works as well as tinkered septage/waste which is discharged into the existing rising main entering the plant

Furthermore, the concept design report references a set of Planning Guidelines and Licence Requirements, encompassing the following:

- "Current DERM planning guidelines specify the following guidelines for wastewater treatment refer Table 5.15 – "Sizing of Sewerage System Components", Planning Guidelines for Water Supply and Sewerage, Department of Environment and Resource Management, April 2010)
- Full treatment provided for 3ADWF
- Minimum of screening and settling for 3-5ADWF
- *Minimum of coarse screening for >5ADWF*" (CH2MHill, July 2013)

SKM considers that the standards used for this project are appropriate.

C.7 Project cost

The current approved budget for the project is included in Table 102 below:

Table 102 : Current approved budget (Unitywater, July 2013)

Item	Budget	% of Total Budget
Project Management (Activity Code 63)	$401,672	7.27%
Design (Activity Code 61)	$398,780	7.21%
Construction (Activity Code 62)	$4,289,289	77.59%
Commissioning (Activity Code 64)	$38,182	0.69%
Contingencies (Activity Code 65)	$400,000	7.24%
Total Budget	**$5,527,923**	100.00%

In April 2012 the revised Coolum Sewage Treatment Plant Major Business Case was approved by the Board which had a total estimated cost of Option 4 of $37.3M with an *estimate of $5.5M for the inlet works and bypass component* which was brought forward five years.

As discussed previously, Unitywater awarded an EPCM contract to undertake preliminary and detailed design, tender support and construction supervision services for the upgrade of inlet works and provision of a new wet-weather bypass at Coolum STP to CH2MHill. This was undertaken as a variation to their current Kawana and Maroochydore contract. The original contract was awarded following an open tender procedure.

CH2MHill originally submitted a fee of $640,863.00 for the Coolum STP Inlet Works, however, following discussions with Unitywater, was requested to submit a 'best and final' offer, which resulted in a fee reduction of $41,000, bringing the fee down to $599,899.00. (Unitywater, June 2012) Unitywater accepted this fee and in July 2012 Unitywater engaged CH2MHill as an EPCM consultant to prepare a concept design and manage delivery of the Coolum STP Inlet Works project. CH2MHill's existing contract value was increased by $599,899 from $1,509,704 to $2,109,603. (Unitywater, May 2012).

The variation to CH2MHill's contract for the Coolum STP works ($599,899) equates to approximately 11% of the overall total project estimate. In SKM's experience, EPCM contracts are usually of the order of at least 13% of the overall project cost. Therefore, SKM concludes that the EPCM costs are efficient.

Package one, the mechanical supply and commission contract was publicly advertised in the Queensland Government Marketplace (eTender) on 15 February 2013. Tenders closed on 7 March 2013 and six submissions were received from six tenderers.

Package one was subsequently awarded to VoR Environmental Pty Ltd in May 2013 for a lump sum of $461,780. There have been no variations to the contract at this stage.

Unitywater has undertaken a robust tender and evaluation process for package one, and as such, the costs associated with the mechanical supply and commission contract are efficient.

Package two was recently awarded. The value of these works is $3.40 million. SKM is satisfied that a robust tendering process has been undertaken and that the costs for the civil construction are in line with market conditions and therefore efficient.

C.8 Efficiency gains

The price of $599,899 was based on the work being undertaken concurrent with CH2MHill's existing EPCM contract, and Unitywater has identified savings of approximately $118,000 over an equivalent level of professional services at Kawana STP, in addition to Unitywater's savings in internal staff and project management costs by not going through an open tender process. The $118,000 cost savings were attributed to:

- Design Management Services – savings of approximately $100,000 were attributed to EPCM management time overlapping with hours already available for the existing Kawana and Maroochdore Projects

- Preliminary Design - During the combined feasibility and preliminary design phase, odour control and grit removal options will be evaluated and a recommendation of a preferred option(s) will be carried forward to the detailed design phase, attributing savings of approximately $49,000
- Detailed Design – savings of $24,000 between the Coolum and Kawana detailed design phases
- Procurement – cost savings of approximately $17,000 were proposed for tender preparation and contract specifications which can be leveraged from the Kawana EPCM contract

These combine to approximately $200,000 in savings (Unitywater, June 2012). No explanation of the difference between the total of these savings and the stated $118,000 in savings has been provided for this review.

Nevertheless, SKM considers that Unitywater has been thorough in identifying efficiency gains for the project.

C.9 Implications for operating expenditure

The implications of the project for operating expenditure are not directly quantified in the documentation provided. However, it is anticipated that the new inlet works and bypass would have lower operating costs than the current dated technology.

In addition, the project will result in a number of benefits resulting from the project. These include:

- The new rising main from Pump Station CLM 099 will be able to be commissioned and consequently minimise the number of overflows in the network
- Improving the treatment of influent to the Coolum STP (The existing inlet works has reached the end of its useful life and is achieving poor screening and grit removal)
- A bypass facility will be built into the Inlet Works reducing the likelihood of the biological treatment process being overloaded or compromised

C.10 Policies and procedures

Table 103 below identifies how the project has complied with the appropriate policies and procedures.

Table 103 : C0886 Coolum STP Upgrade Unlet Works compliance with the Authority's criteria

Initiative	Achievement (Yes/No/Partial)	Comment
Consideration of prudency and efficiency of capital expenditure from a regional (whole-of-entity and whole-of-sector) perspective	Yes	The project needs analysis for Coolum STP was considered in the same report as the Suncoast STP. (Unitywater, February 2011)
Consideration of alternative investments, the substitution possibilities between operating costs and capital expenditure, and non-network alternatives such as demand management.	Yes	A number of options have been considered that take into account alternate strategies such as the implementation of a relining program
A standardised approach to cost estimating, including a standardised approach to estimates for items such as contingency, preliminary and general items, design fees and contractor margins, so that there is uniformity of cost estimating across all proposed major projects	Yes	A standard cost report has been provided for all three of Unitywater's STP project. This is used to forecast costs for completion, rather than for cost estimation, which is appropriate given the stage of the project.
A summary document to be prepared for identified major projects so as to facilitate standardised reporting	Yes	A Major Business Case was provided.
An implementation strategy to be developed for each major project	Yes	Significant Procurement Plan Approval Report – Coolum Inlet Works EPCM (Unitywater, August 2010)

Initiative	Achievement (Yes/No/Partial)	Comment
A 'toll gate' or 'gateway' review process to be implemented so that appropriate reviews are undertaken at milestone stages for selected projects	Yes	Gate 1: • Colum & Suncoast STP Augmentation – Project Needs Analysis (Unitywater, 4 February 2011) Gate 2: • Coolum Sewage Treatment Plant – Major Business Case (Unitywater, January 2012) • Coolum Sewage Treatment Plant – Major Business Case Modification (Unitywater, March 2012) Gate 3: • Variation Request and Approval Form to Kawana and Maroochydore EPCM Contract (Unitywater, July 2012) • Contract Recommendation and Approval Report – Supply and Commission of the Inlet Works Equipment – Coolum STP (Unitywater, 24 April 2013) • Significant Procurement Plan and Capital Works Committee approval for Variation to Kawana STP EPCM Contract to include Coolum STP Inlet Works (Unitywater, June 2012)
Information on the compatibility with existing and adjacent infrastructure and consideration of modern engineering equivalents and technologies.	Yes	The inlet works have been sized based on the incoming flows from downstream pump stations.
Includes only commissioned capital expenditure from 1 July 2010 in the regulatory asset base (RAB) and therefore prices	No	It is unclear when the capital expenditure will be added to the RAB. SKM recommends that this occurs on completion of the final stage of the rising main.

The documentation reviewed for this project is in line with Unitywater's capital delivery processes (eg Project Needs Analysis, Major Business Case, Variation Request and Approval Form, Contract Recommendation and Approval, Significant Procurement Plan). This project has demonstrated no systemic deficiencies in Unitywater's overall policies and procedures.

C.11 Prudency and efficiency summary

The upgrade of the Coolum STP inlet works is required to reduce the number of licence non-compliances and to allow for commissioning of a recently built rising main to prevent overflows in the network.

Unitywater's Treatment Services Strategy involves the decommissioning of the Coolum STP within the 2018-2021 timeframe. SKM has considered the impact of the long term plan to decommission the Coolum STP on the scope of work. However, as the works are required to reduce the number of licence non-compliances and the current growth forecast shows that population will reach nearly 35,000 EP by 2021; SKM finds the scope of work still to be prudent.

SKM is satisfied that a range of options were adequately selected and reviewed and that the scope of works is appropriate to meet the project need.

No barriers to the deliverability of this aspect have been identified.

SKM considers that the standards used for this project are appropriate

The costs for the EPCM contract and for the construction contract are efficient.

C.12 Assessment of reported expenditure

Table 104 below identifies the revised capital expenditure for C0886 Coolum STP Upgrade – Inlet Works.

Table 104 : C0886 Coolum STP Upgrade - Inlet Works proposed capital expenditure

Project	2013-14 ($'000)	2014-15 ($'000)	Total
C0886 Coolum STP Upgrade Inlet Works[1]	5,525	-	5,525
SKM proposed value	5,525	-	5,525
Variation	0	0	0

[1] QCA Templates - UW 2013-15 Regulatory Submission.xls (Unitywater, 2013)

Note: Figures are “as incurred” expenditure and exclude any allowance for capital overhead or borrowing (interest) costs.

C.13 Extrapolation to other projects

It is not anticipated that the findings from this project can be extrapolated to other projects.

Appendix D. C1279 Northern Services Centre construction

D.1 Project description

The Northern Service Centre (NSC) is a Build Own Operate (BOO) scheme constructed on land owned by Unitywater adjacent to the Maroochy STP. The land required preparation prior to construction and a separate capital program was established to prepare the base of the subsequent facilities on the land. An approximate land area of 49,000 m^2 has been prepared for the final development. (Unitywater, 23 July 2013)

The development of the NSC will consolidate a number of different sites across the northern region of Unitywater's operating area (Unitywater , 12 January 2012).

Only the construction component of the NSC project was selected for review by the Authority. It is noted that there are two main components to the NSC project being the construction and the subdivision. The second component of the project, the subsequent subdivision of the land, is not covered in this review.

D.2 Proposed capital expenditure

Table 105 shows the proposed cost of the C1279 NSC Construction within the 2013/15 budget.

Table 105 : C1279 Northern Services Centre Construction proposed capital expenditure ($'000s)

Source	Previous years ($'000)	2013-2014 ($'000)	2014-2015 ($'000)	Subsequent years ($'000)	Total ($'000)
QCA Template[1]	0.5	3,970	-	-	3,970.5
RFI UW 01-06/06 Response Version 1[2]	7,887	3,035	-	-	10,922
RFI UW 01-06/06 Response Version 2[3]	4,751	7,280	-	-	12,031

[1] QCA Templates - UW 2013-15 Regulatory Submission.xls (Unitywater, 2013)

[2] 2013/15 Price Monitoring Review - Request for Information - Unitywater Response - Northern Service Centre (Version 1), Unitywater, 16 July 2013 (Unitywater, 16 July 2013)

[3] 2013/15 Price Monitoring Review - Request for Information - Unitywater Response - Northern Service Centre (Version 2), Unitywater, 23 July 2013 (Unitywater, 23 July 2013)

Note: Figures are "as incurred" expenditure and exclude any allowance for capital overhead or borrowing (interest) costs.

There is a difference of approximately $8.06 million between the expenditure outlined in the QCA Template ($3.97 million) and in the RFI UW 01-06/04 Response, Version 2 ($12,031).

In response to SKM's draft report Unitywater provided clarification around the difference in the QCA template and Unitywater's response documentation. Unitywater stated:

> The Authority *"selected a single project line item to review from the template being C1279. Unitywater uses parent project codes and sub-project codes in Finance 1 our general ledger system. The business case and supporting material consider the entire project inclusive of any sub-project codes that role up into the parent project code.*
>
> *If SKM looks at the file and selects the following project codes the reconciliation of values will make reflect what was expected when the 2013-14 budget and forward capital expenditure program was captured (being the second quarter forecast undertaken in December 2012). That forecast was used to populate the price monitoring templates and for the submission. Subsequent to that the project documentation and cost reports would reflect more recent information as the project progresses."*

Project Number	*Project Name*	*Project Description/Justification*
C1444	*Northern Centre's - Property*	*Northern Centre's - Property*
C1279	*NSC Construction*	*NSC Construction*
C1280	*NSC Subdivision*	*NSC Subdivision*
C0002	*Service St, KULUIN - SCW Service Centre (Depot)*	*Expenditure profile from PM's (Scott Womack) finance data*

Based on this additional information from Unitywater, SKM understand that the following expenditure is included in the overall Northern Services Centre project.

Table 106 : C1279 Northern Services Centre Construction proposed capital expenditure ($'000s)

Project Number	Project Name	Previous years ($'000)	2013-2014 ($'000)	2014-2015 ($'000)	Subsequent years ($'000)	Total ($'000)
C1279	NSC Construction	0.5	3,970.0	-	-	**3,970.5**
C1280	NSC Subdivision	3.8	-	1,462.0	3.8	**1,469.6**
C1444	Northern Centre's - Property	-	1,000.0	-	500.0	**1,500.0**
C0002	Service St, Kuluin - SCW Service Centre (Depot)	7,675.0	-	-	-	**7,675.0**
TOTAL		**7,679.3**	**4,970.0**	**1,462.0**	**503.8**	**14,615.1**

This revised expenditure for the NSC, $14.7 million, does not reconcile with the expenditure in the RFI UW 01-06/04 Response, Version 2 (approximately $12.0 million). It is also noted that there is a difference of approximately $1.11 million between the total project value in the RFI UW 01-06/04 Response, Version 1 ($10,922) and the RFI UW 01-06/04 Response, Version 2 ($12,031).

The reasons for these differences are likely to be due to different components being included (eg the subdivision). As previously stated, this review focuses on the NSC construction only.

D.3 Documentation reviewed

The key reference documents used for this review are:

- QCA Templates - UW 2013-15 Regulatory Submission.xls (Unitywater, 2013)
- 2013/15 Price Monitoring Review - Request for Information - Unitywater Response - Northern Service Centre (Version 1, (Unitywater, 16 July 2013)
- 2013/15 Price Monitoring Review - Request for Information - Unitywater Response - Northern Service Centre (Version 2) (Unitywater, 23 July 2013)
- *Strategic Property Review Report* (Ranbury Mangement Group, June 2011)
- *Northern Service Centre Business Case* (Unitywater , 12 January 2012)
- Northern Service Centre Business Case Decision Paper – Capital Works Committee (Unitywater, 5 October 2011)
- *Recommendation Evaluation Memo - Part 1* (Unitywater, 20 May 2011)
- *Recommendation Evaluation Memo - Part 2* (Unitywater, 20 May 2011)
- Contract Recommendation and Approval Report - Contract Number UW002082 – Bulk Earthworks (Unitywater, 20 May 2011)
- Contract Recommendation and Approval Report - Contract Number UW002238 – Design and Construct (Unitywater, 20 May 2011)

- *Cost Report* (Unitywater, June 2013)
- *Architectural Drawings - Design Plan* (Dimond Architects Pty Ltd, June 2013)
- *Northern Service Centre Monthly Report* (Unitywater, 4 July 2013)
- *Project Schedule* (Unitywater, 20 June 2013)
- *Opex Rent Lease Savings for Revised 2013-15 Monitoring Period* (Unitywater, 23 July 2013)
- Northern Service Business Centre Clarification for Response to Request for Information (Unitywater, 23 July 2013)

D.4 Key drivers

The identified driver for this project is business efficiency. This is not a driver specifically endorsed by the Authority.

Unitywater states that the development of the NSC is consistent with Unitywater's Accommodation Strategy of servicing Unitywater's operating area from northern and southern hubs, each of which would contain a service centre and a corporate centre (Unitywater , 12 January 2012). The Accommodation Strategy, approved in concept by the Board on 25 August 2011, included Unitywater's Future Operating Concept. Unitywater state that the currently planned distribution of office based staff of 110 staff located in the NSC service centre (supporting up to 100 field staff at job sites) and 200 staff located in the corporate centre is consistent with this Concept. The Accommodation Strategy document has not been provided to SKM to review.

Unitywater states that staff to service the northern region currently operate out of a number of sites, of which many are leased from the Sunshine Coast Council (SCC). These include:

- SCC Noosa Depot
- SCC Nambour Depot
- SCC Caloundra Depot (Industrial Ave)
- SCC Caloundra Depot (Allen St)
- SCC Maroochy Depot (Wises Road)
- Technology Drive, Kawana (commercial lease)
- Unitywater's Sugar Bag Rd site – a single parcel of land that includes a major water reservoir that negates the option of its sale for this business case
- Unitywater's Kawana STP – temporary accommodation
- Unitywater's 8 - 10 Maud St (commercial lease) (Unitywater , 12 January 2012)

Unitywater has identified that continuation with these sites is not sustainable for the following reasons:

- There is no security of tenure for the SCC sites. SCC has indicated that it is not willing to provide the current sites as long term (past 2012-13) accommodation to Unitywater
- Multiple sites do not support the following efficiencies:
  - Time savings through the collocation and integration of work practices
  - The planned rationalisation of functional support such as logistics, fleet and administration
  - Consolidation and rationalisation of facility maintenance costs
- Productivity of Field Services Branch and the Logistics Section is currently reduced by the need to collect or deliver stores at different sites (Unitywater , 12 January 2012)

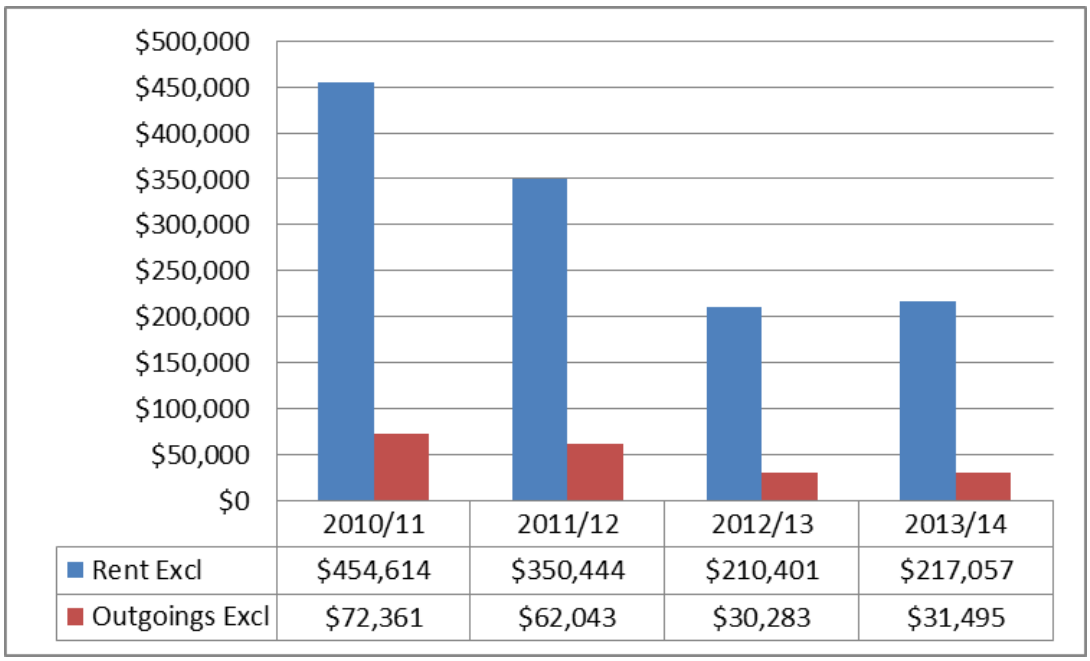
The benefit of the planned rationalisation of functional support such as logistics, fleet and administration has not been costed by Unitywater or demonstrated to SKM.

An email from the CEO of SCC from 11 October 2011 is referenced in the Business Case. It is assumed that this email supports the above point regarding no security of tenure for the SCC sites; however this email has not been sighted by SKM.

Unitywater provided the following data regarding the rent per annum associated with the multiple facilities since 2010/11, Figure 6-3. The facilities rent was provided for were:

- 35 Technology Drive, Warana
- 9 Tandem Avenue, Warana
- 11 Tandem Avenue, Warna
- 10 Barlett Road, Noosaville (SCRC Noosa Works Depot)
- Industrial Ave, Caloundra West (SCRC Caloundra/Industrial Works Depot)
- 66 Queens Street, Caloundra (SCRC Allen St Depot)
- 89 Wises Road, Maroochydore (SCRC Maroochydore/Wises Depot)
- 4 National Park Road, Nambour (SCRC Nambour Works Depot)
- 4 demountable buildings at Kawana STP (Unitywater, 23 July 2013)

Figure 6-3 : Unitywater rent (Unitywater, 23 July 2013)



	2010/11	2011/12	2012/13	2013/14
Rent Excl	$454,614	$350,444	$210,401	$217,057
Outgoings Excl	$72,361	$62,043	$30,283	$31,495

SKM expects that beyond 2014-15 rent will decrease to $0 per annum as all staff currently located at these facilities will be able to be accommodated at the NSC (as leases at these locations expiry or relevant break clauses are activated). As such, there should be a corresponding decrease in rent related operating costs.

The reductions to date are due to:

- The vacating of 9 and 11 Tandem Avenue, Warana in April 2011
- The vacating of 35 Technology Drive, Warana in July 2011
- The vacating of 10 Barlett Road, Noosaville (SCRC Noosa Works Depot) and Industrial Ave, Caloundra West (SCRC Caloundra/Industrial Works Depot) in May 2012

Unitywater has not advised if these premises were vacated in preparation for the relocation to the NSC once complete or due to staff reductions and hence a reduction in accommodation requirements. Without further clarification, SKM understands that a reduction of approximately $217,000 per annum in rent will be achieved following the completion of the NSC.

As the continuation of renting multiple facilities from SCC is not a viable option, there is a need for Unitywater to identify new accommodation for staff. SKM accepts that the consolidation of multiple service depots in the northern region is likely to result in improved collocation and integration of work practices business through the rationalisation of functional support and lower operating costs associated with the rent of multiple facilities. Whilst SKM notes that the benefit of the planned rationalisation of functional support has not been quantified, SKM finds the NSC construction to be prudent.

D.5 The scope of works

D.5.1 Solutions development

Unitywater notes that prior to the formation of Unitywater, Sunshine Coast Water recognised the need for the consolidation of the water/sewerages field services inherited through the amalgamation of three councils. Excess land adjacent to the Maroochy STP was identified as a suitable site for a field service centre. Development Approval (DA) was granted in April of 2011 for the construction of a Public Utility service centre and corporate centre at this site. (Unitywater , 12 January 2012)

Unitywater commissioned an independent review, of its property portfolio, by Ranbury, to integrate the business across the operating area; find operating efficiencies and improve customer service. The review considered the adequacy of the current asset portfolio, revenue opportunities, accommodation requirements, and service centre options.

The findings from the review included:

- The general direction to consolidate/co-locate Unitywater accommodation and operational facilities is a logical (and financial) imperative and is supported
- The general direction to co-locate administration and operational services into a northern and southern location (two-centre model) is also supported
- There is no advantage in maintaining the status quo for Unitywater assets and maintaining the existing geographic separation of operations (as confirmed by base case financial models). Equally, given the risks, there is currently no advantage in constructing a new single facility on the Sunshine Coast to service the entire Unitywater operational region.
- The two-centre model achieves a balance by bringing together activities and resources into two geographically accessible locations and provides an acceptable level of financial risk based on the current water operations climate (Ranbury Mangement Group, June 2011)

For the northern region, the options considered in the Ranbury review were:

- Option 1A - North single owned site (BOO) - Fisherman’s Road Full Co-location
- Option 1B - North combination own (BOO) & Lease - Fisherman’s Road Depot Construction (owner-occupier) and External Office Leasing
- Option 1C - North lease (2 sites) - Fisherman’s Road Depot Construction (with Unitywater as tenant) and External Office Leasing
- Option 1D - North lease 2 sites - Fisherman’s Road Depot Construction (with Unitywater as tenant) and Maud Street Office Leasing
- Option 1E - North lease 2 sites - Fisherman’s Road Depot Construction (with Unitywater as tenant) and Maud Street Office Leasing (Ranbury Mangement Group, June 2011)

Table 107 : Options comparison (Ranbury Mangement Group, June 2011)

Option	Details	Build Cost ($ M)	Gross Rent (p.a)	NPV ($ M)	Marginal benefit (cost) ($ M)
Base case	Business as usual			16.4	-
Option 1A - Fisherman's Road Full Co-location	• Amendment to DA • 5,690 m^2 office/depot facility • Earthworks and landscaping • Car parking as per DA	20	Nil	15.2	1.2
Option 1B - Fisherman's Road Depot Construction (owner-occupier) and External Office Leasing	• Amendment to DA • 3,560 m^2 depot construction • Lease 2,200 m^2 of office space (e.g Maroochydore, Kawana) • Sell surplus land for $3.5 – 4 M	14	960,000	15.3	1.1
Option 1C - Fisherman's Road Depot Construction (with Unitywater as tenant) and External Office Leasing	• Amendment to DA • 3,560 m^2 depot construction • Lease 2,200 m^2 of office space (e.g Maroochydore, Kawana) • Sell surplus land for $3.5 – 4 M	Nil	$950,000 (Depot) $960,000 (Office)	15.8	0.65
Option 1D - Fisherman's Road Depot Construction (with Unitywater as tenant) and Maud Street Office Leasing	• Amendment to DA • 3,560 m^2 depot construction • Lease 2,300 m^2 of office space at Maud Street (additional 2 levels) at $920,000 per annum • Sell surplus land for $3.5 – 4 M	Nil	$950,000 (Depot) $920,000 (Office)	13.6	2.8
Option 1E - Fisherman's Road Depot Construction (with Unitywater as tenant) and Maud Street Office Leasing	• Amendment to DA • 3,560 m^2 depot construction • Lease 3,300 m^2 of office space at Maud Street (additional 2 levels) and sub-let 900 m^2 – net lease p.a = $1.05 million • Sell surplus land for $3.5 – 4 M	Nil	$950,000 (Depot) $1,050,000 (Office)	14.7	1.7

The conclusions from the Ranbury review included:

- The Fisherman's Road site is an ideal location for the proposed operational use in particular and clearly provides an opportunity for expansion both now and in the future
- From a financial perspective, the preferred option for Unitywater is Option 1D (construct the depot at the Fisherman's Road site with Unitywater as Tenant and lease 2,200 m^2 of office space at Maud Street)
- Option 1E (construct the depot at the Fisherman's Road site with Unitywater as Tenant and lease 3,300 m^2 of office space at Maud Street) provides a practical and more effective long term strategy for Unitywater (Ranbury Mangement Group, June 2011)

Following the independent review Unitywater subsequently developed a business case which specifically related to a service centre only with approximately 110 staff office based supporting up to 100 field staff.

Within the Business Case, Unitywater states that:

> *"Numerous options have been proposed and assessed. The main drivers in considering options has been the efficiency of the business, the time involved to relocate into a new facility, cost, employee morale and*

facility functionality. In consideration of these drivers, the field was narrowed to four options for specific consideration. All options are based on a design concept shown at Annex B. The concept is for the purpose of estimating on the understanding that the actual design of the building would be contracted out." (Unitywater , 12 January 2012).

The business case considered the following options:

- Option A – Do nothing
- Option B – Commercial lease
- Option C – Lease back
- Option D – Build, own and operate (BOO) (Unitywater , 12 January 2012)

Option A was excluded as the option of maintaining the status quo is unsustainable because SCC has indicated that it is not prepared to continue its leasing arrangements and because it denies Unitywater of operating efficiencies (Unitywater , 12 January 2012).

Option B was excluded based on the finding from the Ranbury review that there were no suitable industrial or semi industrial sites for lease (or sale) that would meet the requirements of a NSC, as of July 2011. In addition the possibility of having a facility built for Unitywater on developers land was also considered and discussed with two developers, with the main concern that the facility would need to be purposely built as a utility depot and would be difficult to lease on the general market at the termination of the lease, resulting in a high risk to the developer. (Unitywater , 12 January 2012)

Under Option C, Unitywater would sell approximately 16,000 m^2 to a developer for the construction and lease back of the NSC building to Unitywater. The balance of the developable land (approximately 22,700 m^2) can be subdivided by Unitywater and sold in the future at an estimated net return of $3.0 million or retained for future expansion. This option had the same developers concerns as Option B. (Unitywater , 12 January 2012)

Option D has Unitywater as the developer to build, own and operate (BOO) the NSC at Fisherman's Road. The development of the site would be done through a Design and Construct contract. The balance of the developable land not used by Unitywater could be subdivided and sold in the future at an estimated return of net $3.0 million or retained for future expansion. (Unitywater , 12 January 2012)

Based on the initial assessment, Unitywater financial evaluated Options C and D, as outlined in Table 108.

Table 108 : Financial evaluation of Option C and Option D ($ M) (Unitywater, 23 July 2013)

Option	Description	Initial Capital Expenditure	Operating costs	NPV	Rank
Option C	Lease-back	Nil	7.7	0.4	2
Option D	BOO	10.9	3.1	0.1	1

A Multi-Criteria Analysis (MCA) was completed for Options D and C. Financial consideration composed 60% of the analysis while non-financial criteria; being technical risk, strategic alignment, timing, environment, workforce/community and future proofing; composed 40%. From the MCA Option D received a higher score (Unitywater , 12 January 2012).

Option D was the preferred option on the basis of financial and non-financial criteria. Unitywater states that:

"While Option D only provides a marginally better NPV, it allows Unitywater to take advantage of current market conditions and provides greater control over the development and tenure of the site and is therefore more strategically sustainable." (Unitywater , 12 January 2012)

The preferred option from the Ranbury review was to construct the depot at the Fisherman's Road site with Unitywater as Tenant and lease 3,300 m^2 of office space at Maud Street (Option 1E). The preferred option the

business case from was to build, own and operate (BOO) the depot at the Fisherman's Road. Unitywater states that:

> *"based on discussions with developers operating on the Sunshine Coast, it is believed that the desired return on investment used in the Ranbury Report is understated, consequently overstating the NPV of Option C."* (Unitywater , 12 January 2012)

SKM notes that Unitywater may have been referring to the cost of capital (ie discount rate) not return on investment. No documentation supporting this decision has been provided by Unitywater.

SKM is satisfied that a range of options were assessed and that an appropriate evaluation process was applied. SKM considers that the selection of Option D is appropriate.

The Ranbury review determined the accommodation requirements for the NSC as 70 administration office staff and 170 depot staff. The following assumptions were used to determine the gross floor area requirements:

- For administration office staff only, 13 m^2 of net floor area is required for each staff member
- For depot staff only, 15 m^2 of net floor area is required for each staff member
- The typical conversion percentage from net floor area to gross floor area is 15% (Ranbury Mangement Group, June 2011)

From these, the Ranbury review determined that a gross floor area of 1,047 m^2 would be required for the administration office staff and a gross floor area of 2,513 m^2 would be required for the depot staff. This resulted in a total gross floor area of 3,979 m^2 (Ranbury Mangement Group, June 2011)

The Ranbury review states that the net floor area assumptions were based on the existing areas in Unitywater properties (for office and depot administration), the floor areas contained in the material change of use approval at Fisherman's Road and general standard practice. SKM consider the net floor area assumptions adopted are appropriate given requirements for circulation space, photocopying/printing and storage.

Subsequent to the Ranbury review, Unitywater engaged Architectus to determine the space allocation required for the NSC. Architectus determined that 110 work stations would be required, with 6 m^2 floor area required for each permanent work stations and 4 m^2 floor area required for each for hot desk, totally 604 m^2. Allowances were made for meeting room, quite room, training rooms, amenities and circulation (1,252 m^2). This results in a total of 1,856 m^2 being required for the office component. An additional allowance of 10% was included for general circulation resulting in a recommended floor space of 2,042 m^2. (Architectus, December 2011)

SKM consider that the work station floor area assumptions adopted by Architectus are appropriate, as are the floor area requirements for circulation space, meeting room and amenities.

The accommodation requirements for the NSC adopted in the Business Case are outlined in Table 109.

Table 109 : Accommodation requirements for the NSC in the Business Case (Unitywater , 12 January 2012)

Area	**Total (m^2)**
Office space	2,042
Shed space	1,541
Hardstand storage	5,947
Secure car park	2,184
Landscaping and quiet area	2,000
Employee car park	2,900
Total	**16,614**

In Unitywater's Response to Request for Information - Northern Service Centre (Unitywater, 23 July 2013) Unitywater notes that:

> *"Upon approval of the Northern Service Centre project, Unitywater engaged Dimond architects to complete the final specifications for the NSC design and construct tender. This included a final review of Unitywater needs and teams to be accommodated at the site. This review was endorsed and incorporated into the design and construction contract."*

Table 110 presents the accommodation requirements throughout the project.

Table 110 : Accommodation requirements (Unitywater, 23 July 2013)

Area	Business Case Scope (m^2)	Final D&C Contract Scope (m^2)	Percent Change
Office space/training area	2,042	2,200	↑ 8%
Shed space	1,541	1,780	↑ 16%
Secure carpark/hard stand	13,417	13,020	↓ 3%
Total	**17,000**	**17,000**	**0%**

SKM noted that although the overall total area of the site did not changed the office space/training area accommodation requirement increased by 8%. In response to the draft report Unitywater states that:

> *"It should be clarified that Dimond Architects only provided specifications and drawings. The review referenced was an "internal review" undertaken by Unitywater's project manager to confirm final space requirements (as a follow up to space allocation review undertaken by Architectus). Dimond Architects did not undertake a review of space requirements. The office area increased slightly based on the need identified to provide an additional training room."*

From the Dimond Architects Architectural Drawings (Dimond Architects Pty Ltd, June 2013) the usable office area is approximately 1,922 m^2 with approximately 300 m^2 allowed for the toilet areas and lunch rooms. Based on the 110 staff (from the Business Case) this equates to a ratio of staff to floor area of approximately 1:17 m^2. SKM finds the ratio of staff to floor area of approximately 1:17 m^2 to be acceptable.

D.5.2 Project delivery

The NSC works is being delivered through three packages:

- Bulk earthworks
- Design and construction (D&C) of the NSC
- Building fit-out (Unitywater , 12 January 2012)

Unitywater separated the bulk earthworks from the D&C package to make it more attractive to a wider variety of construction firms forcing more competitive pricing (Unitywater , 12 January 2012).

Subdivision, development approval, site design and site preparations were undertaken by Unitywater to develop the building site to readiness for construction (Unitywater, 23 July 2013).

A tender for the bulk earthworks contract was called in February 2012. When tenders closed on 15 March 2012 six submissions had been received. The contract was subsequently awarded to Hall Contracting. A tender for the building D&C contract was called in July 2012. Fourteen submissions were received at the close of tender on 12 September 2012. The contract was subsequently awarded to Hutchinson Builders. This process is discussed further in Section D.7. (Unitywater , 12 January 2012)

SKM is of the opinion that Unitywater has followed their Procurement and Disposals Policy, which requires the conduct of open tenders for works in excess of $150,000 in the procurement of bulk earthworks and D&C services for the project.

According to the project schedule, construction of the NSC is anticipated to be completed in November 2013 (Unitywater, 20 June 2013).

No barriers to the deliverability of the NSC have been identified except for potential rainfall periods that could delay the project schedule.

D.6 Standards of service

Unitywater states that the building standard shall comply with all statutory building requirements and the most current version of all Australian Standards and Codes of Practice in force at the date of building approval. The design criteria shall be based on AS1170 by the principal's RPEQ Structural engineer.

SKM reviewed the construction type and materials selected for this building and consider that they are in keeping with accepted industry standards. It is noted that the external walls of either tilt-up concrete or concrete blockwork will not provide sufficient thermal insulation to meet current Section J requirements of the National Construction Code. The walls will need additional insulated linings either externally or internally to provide sufficient thermal resistance. SKM recommends that this element is further reviewed.

In general, SKM considers that the standards used for this project are appropriate.

D.7 Project cost

The current spend profile for the project is included below in Table 111.

As discussed earlier Unitywater has advised that the supporting documentation provided covers the whole NSC project. Based on this, SKM understands that the construction costs and part of the preliminary design, specifications and project management included in Table 111 are subject to review.

Table 111 : Spend Profile (Unitywater, 23 July 2013)

Item	Cost			
	2011-12	2012-13	2013-14	Total
Infrastructure Charges	$300,000	-	$ 516,000	$516,000
Preliminary Design, Specifications and Project Management for Site Work and Construction	$210,000	$168,639	$95,000	$473,639
Site work (anticipated)	$408,650	$2,235,661	$285,000	$2,929,311
Construction	-	$1,728,257	$5,089,480	$6,817,737
ICT and Fitout – includes project management and contingency for these items	-	-	$1,295,000	$1,295,000
Total capital costs	**$618,650**	**$4,132,557**	**$7,280,480**	**$12,031,687**

A conceptual design for the NSC was completed by architecture firm Sprout Architects. Architectus assessed the space allocations for various categories of use and provided modifications to the design to reduce the gross floor area requirement for the office facilities. This conceptual design was then costed using Rider Levett Bucknall Quantity Surveyors (RLB) to cost the conceptual design using gross floor areas as the basis. RLB were instructed to use rates for quality fitting and finishes, while keeping the costs as low as possible.

The tender for the bulk earthworks contract was publicly advertised in the paper and on the eTender website in February 2012. When tenders closed on 15 March 2012 six submissions had been received.

The submissions were evaluated on price and non-price criteria. The price element had a weighting of 50% and non-price had a weighting of 50%, being comprised of track record and experience (15%), methodology for project delivery (10%), safety and the environment (15%) and contribution to local economy (10%). On price

criteria Hall Contracting received the highest score while on the non-price criteria Hall Contracting had the highest score, tied with Shadforths Civil Engineering. Unitywater awarded the contract to Hall Contracting for a lump sum of $2.06 million (excluding GST) on the basis of the lowest price and highest non-price score. (Unitywater, 20 May 2011)

A number of variation claims has been received, to date, from Hall Contracting on the bulk earthworks contract. The total of these variations is approximately $400,000. Unitywater has not advised if any or all of these variations have been approved. A contingency allowance of approximately $211,500 was included in the contract recommendation and approval documentation. The variations received to date, assuming that all have been approved, exceed the contingency allowance.

The tender for the building design and construction contract was publicly advertised on the Queensland Government Marketplace e-Tender website on 28 July 2012 for the D&C of the Northern Service Centre. Fourteen submissions were received at the close of tender on 12 September 2012. All submissions were reviewed by the panel and the eight lowest price tenders were shortlisted for a detailed assessment. (Unitywater, 23 July 2013)

The eight tenders were assessed on both price and non-price criteria of:

- Financial (60%)
- Project delivery and methodology (20%)
- Track record and experience (10%)
- Safety and environment (5%)
- Contribution to local economy (5%) (Unitywater, 20 May 2011)

Table 112 : Weighted price and non-price scores (Unitywater, 20 May 2011)

Tender	Weighted non-price score	Weighted price score	Overall score
Hutchinson Builders	40	60	100
Midson Construction	32.35	58.75	91.10
Evans Harch	37.02	58.71	95.73
James Trowse Constructions	27.5	57.74	85.24
Multi Span Australia Group	35.91	57.24	93.15
National Buildplan Group	33.85	55.70	89.54
BBN Constructions	36.08	53.38	89.54
Kane Construction	38.75	51.10	89.85

As can be seen from the above Hutchinson Builders received the highest score for both non-price and price criteria, and subsequently the highest overall score (Unitywater, 20 May 2011).

Unitywater state that Post Tender negotiations were held with Hutchinson Builders and Evans Harch requesting a Best and Final Offer (BAFO) (Unitywater, 23 July 2013). Unitywater awarded the contract to Hutchinson Builders for a lump sum of approximately $5.8 million (excluding GST).

Based on a building floor area of approximately 3,975 m^2, the cost per m^2, based on the D&C contract sum of $5,829,769, is $1,467/$m^2$. From the Rawlinsons Australian Construction Handbook, the current m^2 rate for the construction of a building of this type sits in the range of $2,275 - $2,455/$m^2$ (Rawlinsons Australian Construction Handbook, 31st Edition, 2013). SKM therefore finds that the rate cost per m^2 received by Unitywater is competitive.

Eight variation claims has been received, to date, from Hutchinson Builders on the D&C contract. The total of these variations is approximately $410,000. Unitywater has not advised if any or all of these variations have been approved. A contingency allowance of approximately $227,000 was included in the contract recommendation and approval documentation. The variations received to date, assuming that all have been approved, significantly exceed the contingency allowance. However, even including the variation allowances, the cost for the building is still efficient.

It is noted that the building fit-out has been added as a variation to the main contract with Hutchinson Builders. As the fit-out is outside of SKM's scope for review, this has not been considered further.

SKM finds that the tender process used for the evaluation and subsequent award of the bulk earthworks contract and the D&C contract was robust and that the costs are in line with market conditions.

SKM find that the construction costs, $6.8 million, are efficient.

SKM notes that the line item selected for review (C1279 NSC Construction $3.97 million) is lower than the reviewed construction costs ($6.8 million). SKM understands that the difference in costs is likely to be capture in one of two other line item (C1444 Northern Centre's – Property or C0002 Service St, Kuluin - SCW Service Centre (Depot)).

SKM recommends that the full expenditure value of $3.97 million be included in the budget.

D.8 Efficiency gains

The consolidation of the crews and resources will offer operational efficiencies across the northern operating area.

Asset security will be enhanced with the consolidation of assets to a singular site. Stores and teams are centralised to single location gaining efficiency in operation with the outcome of improving the service levels to the customer base. Unitywater state that consolidation of the teams, services and functions will impact the culture of the company (one team) enhancing the achievement of the Unitywater's vision. (Unitywater, 23 July 2013).

D.9 Implications for operating expenditure

The reduction in the number of facilities being rented by Unitywater will result in lower renting costs. It noted that there are other costs associated with the owning and operating of a facility. However, this aspect is not part of SKM's review.

SKM expects to see reduced operating costs through planned rationalisation of functional support. The magnitude of these costs has not been provided to SKM.

D.10 Policies and procedures

Table 113 below identifies how the project has complied with the appropriate policies and procedures.

Table 113 : C1279 Northern Services Centre Construction compliance with the Authority's criteria

Initiative	Achievement (Yes/No/Partial)	Comment
Consideration of prudency and efficiency of capital expenditure from a regional (whole-of-entity and whole-of-sector) perspective	Yes	The NSC will consolidate a number of facilities throughout Unitywater's northern region.
Consideration of alternative investments, the substitution possibilities between operating costs and capital expenditure, and non-network alternatives such as demand management.	Yes	The Business Case (Unitywater , 12 January 2012) considers a number of alternatives including renting vs. building a new facility.

Initiative	Achievement (Yes/No/Partial)	Comment
A standardised approach to cost estimating, including a standardised approach to estimates for items such as contingency, preliminary and general items, design fees and contractor margins, so that there is uniformity of cost estimating across all proposed major projects	No	Unitywater's standardised cost estimation process has not been undertaken for this project. However it is noted that this spreadsheet is designed to cover Unitywater's standard works (ie pumps and pipework) rather than buildings.
A summary document to be prepared for identified major projects so as to facilitate standardised reporting	Yes	A Major Business Case was provided.
An implementation strategy to be developed for each major project	Yes	• Northern Service Centre Business Case (Unitywater , 12 January 2012) • Northern Service Centre Business Case Decision Paper Capital Works Committee (Unitywater, 5 October 2011)
A 'toll gate' or 'gateway' review process to be implemented so that appropriate reviews are undertaken at milestone stages for selected projects	Yes	Gate 1: • Strategic Property Review Report – Ranbury (Ranbury Mangement Group, June 2011) Gate 2: • Northern Service Centre Business Case (Unitywater , 12 January 2012) Gate 3: • Approval of the Contract Recommendation and Approval Report - Earthworks Contract (Unitywater, 20 May 2011) • Approval of Contract Recommendation and Approval Report – NSC D&C Contract (Unitywater, 20 May 2011)
Information on the compatibility with existing and adjacent infrastructure and consideration of modern engineering equivalents and technologies.	Yes	
Includes only commissioned capital expenditure from 1 July 2010 in the regulatory asset base (RAB) and therefore prices	No	Unitywater states that capital projects are added to the RAB on an as commissioned basis. Based on the information provided, it is not possible for SKM to make a clear determination as to whether the RAB only includes commissioned capital expenditure from 1 July 2010.

The documentation reviewed for this project is in line with Unitywater's capital delivery processes (eg Business Case, Contract Recommendation and Approval Report). SKM notes that no Project Needs Analysis Report was undertaken. However, a Strategic Property Review Report was produced.

Whilst Unitywater's standardised cost estimation process has not been undertaken for this project, it is noted that this spreadsheet is designed to cover Unitywater's typical works (ie pumps and pipework) rather than buildings. As such, SKM finds the independent estimates produced to be acceptable.

This project has demonstrated no deficiencies in Unitywater's overall policies and procedures.

D.11 Prudency and efficiency summary

The development of the NSC will consolidate a number of sites across the northern region of Unitywater's operating area. The site will provide a single location from which service functions will operate.

As the continuation of renting multiple facilities from SCC is not a viable option, there is a need for Unitywater to identify new accommodation for staff. SKM agrees that the consolidation of multiple sites in the northern region is likely to result in improved collocation and integration of work practices business and lower operating costs associated with the rationalisation of functional support and the rent of multiple facilities. SKM finds the NSC construction to be prudent.

SKM is satisfied that a range of options were assessed and that an appropriate evaluation process was applied. SKM considers that the selection of Option D is appropriate, even though it is not in line with the recommendation of the previous independent report, as information received subsequent to the completion of the Ranbury review changed Unitywater's assessment of the options.

The assumptions used for the determination of the accommodation requirements in the Architectus review are appropriate.

SKM accepts that Unitywater has followed their Procurement and Disposals Policy, which requires the conduct of open tenders for works in excess of $150,000 in the procurement of bulk earthworks and D&C services for the project. No barriers to the deliverability of the NSC have been identified except for potential rainfall periods that could delay the project schedule.

In general, SKM considers that the standards used for this project are appropriate however suggests that the need for additional insulated linings be further reviewed.

SKM finds that the tender process used for the evaluation and subsequent award of the bulk earthworks contract and the D&C contract was robust and that the costs are in line with market conditions. SKM find that the construction costs, $6.8 million, are efficient.

SKM recommends that the full costs for C1279 Northern Services Centre Construction be adopted (3.97 million) with the balance of efficient costs captured within other budget line items.

D.12 Assessment of reported expenditure

Table 114 below identifies the proposed capital expenditure for C1279 Northern Services Centre Construction.

Table 114 : C1279 Northern Services Centre Construction proposed capital expenditure

Project	2013-14 ($'000)	2014-15 ($'000)	Total ($'000)
C1279 Northern Services Centre Construction	3,970	0	3,970
SKM proposed value	3,970	0	3,970
Variation	0	0	0

Note: Figures are "as incurred" expenditure and exclude any allowance for capital overhead or borrowing (interest) costs.

D.13 Extrapolation to other projects

SKM does not consider that the findings from this project can be extrapolated to other projects.

Appendix E. C9089 SCADA Improvement and Integration Program

E.1 Project description

The Unitywater SCADA Improvement Program is considered a transitional project as it develops the capability of the organisation to effectively manage and operate its assets. The operation of the assets is governed by a consolidated set of licences and permits transferred to Unitywater as part of the formation of the organisation in July 2010. The project has a life extending over a number of years as it is replacing transferred operational systems with Unitywater defined operational systems. The transition must be managed to limit the impact on operational ability to maintain compliance with the consolidated set of licences, permits and regulatory requirements (Unitywater, 5 July 2013).

Unitywater currently operates 11 separate SCADA systems, which were inherited from the previous two water utilities which amalgamated to form Unitywater (Moreton Bay Water (MBW)) and Sunshine Coast Water (SCW)). Both MBW and SCW had planned SCADA System and Telemetry Upgrades prior to the formation of Unitywater. After the formation of Unitywater, the SCADA Upgrade Programs were consolidated across both regions into one program of four sub-projects. The SCADA Improvement Program is one of these four sub-projects (Unitywater, 5 July 2013).

The project involves replacing all 11 legacy SCADA systems with two systems (North and South) within one single platform. All Remote Telemetry Units (RTUs) are to be replaced and site enabling works to allow for a common control platform (Unitywater, 5 July 2013).

E.2 Proposed capital expenditure

Table 115 shows the proposed cost of the SCADA Improvement Program Project within the 2013/15 budget.

Table 115 : SCADA Improvement Program project proposed capital expenditure ($'000s)

Source	Previous years ($'000)	2013-2014 ($'000)	2014-2015 ($'000)	Subsequent years ($'000)	Total ($'000)	2013-15 Total ($'000)
QCA Template[1]	7,347	12,572	3,572	-	23,491	16,144
RFI UW 01-06/04 Response[2]	20,283	12,138	3,832	-	36,253	15,970

[1] QCA Templates - UW 2013-15 Regulatory Submission.xls (Unitywater, 2013)

[2] 2013/15 Price Monitoring Review - Request for Information - Unitywater Response - SCADA Improvement and Integration C9089, Unitywater, 5 July 3013 (Unitywater, 5 July 2013)

Note: Figures are “as incurred” expenditure and exclude any allowance for capital overhead or borrowing (interest) costs.

There is a difference of approximately $12.8 million between the expenditure outlined in the QCA Template ($23.5 million) and that outlined in the RFI UW 01-06/01 Response ($36.3 million). Clarification of this difference has not been provided by Unitywater.

E.3 Documentation reviewed

The key reference documents used for this review are:

- QCA Templates - UW 2013-15 Regulatory Submission.xls (Unitywater, 2013)
- 2013/15 Price Monitoring Review - Request for Information - Unitywater Response - SCADA Improvement and Integration C9089 (Unitywater, 5 July 2013)
- *Project Brief and Minutes of Asset Steering Committee* (Unitywater, 3 November 2010)
- SCADA Project Decision Paper - Capital Works Committee (Unitywater, May 2012)
- *Co-ordination Committee Meeting* (Moreton Bay Regional Council, 11 August 2009)

- *Key Performance Indicators* (Unitywater, 10 July 2013)
- Extract - Minutes of the Capital Works Committee Meeting - 4.1 – Scada (Unitywater, 30 May 2012)
- *Significant Procurement Plan* (Unitywater, 21 March 2013)
- Contract Recommendation and Approval Report Form (Phase 1) (Unitywater, 20 May 2011)
- Contract Recommendation and Approval Report Form (Phase 2.1) (Unitywater, 6 August 2012)
- Contract Recommendation and Approval Report Form (Phase 2.2a) (Unitywater, 20 May 2011)
- Contract Recommendation and Approval Report Form (Phase 2.3a) (Unitywater, 20 May 2011)
- SCADA Upgrade Program - Project Advisory Team - Monthly Report May 2013 (Unitywater, 14 June 2013)
- Technical Specification - SCADA and Telemetry Outstation Upgrade (Unitywater, 4 April 2012)
- *Site Selection Sequence Criteria* (Unitywater, 17 October 2011)
- *Site List Selection Guide* (Unitywater, No date)
- *Transmittal Re: Phase 2.2 Site List - For Review* (Unitywater, 23 October 2012)
- *Response to RFI - SCADA Improvement and Integration* (Unitywater, 23 July 2013)

E.4 Key drivers

The identified drivers for this project are compliance and improvement. SKM notes that this is a legacy project initiated under MBW and SCW.

The previous two water utilities (MBW and SCW) had SCADA System and Telemetry Upgrade replacement in their forward capital works programs. Unitywater inherited separate SCADA contracts to deliver the SCADA systems in the North and South. The two former water utilities had collaborated prior to the formation of Unitywater to ensure these contracts shared common technical, functional and performance requirements which allows standardisation of hardware, system configurations and site installations; delivering short and long term efficiency gains. Prior to the formation of Unitywater, a strategic business decision was made by SCW to appoint the same SCADA integrator as the contractor engaged by MBW in order to promote standardisation in technology, products and design (Unitywater, 5 July 2013).

Soon after the formation of Unitywater the SCADA Upgrade Program was consolidated across both regions into one program of four sub-projects. The four sub-projects are:

- SCADA Improvement (C9089)
- Switchboard Replacement (C0275)
- Instrumentation Replacement (C9062)
- Communications Infrastructure (C0274) (Unitywater, 5 July 2013)

The contract recommendation (Moreton Bay Regional Council, 11 August 2009) submitted to and approved by the MBRC provides an overview of the drivers. This listed the project drivers as:

- *"To comply with and satisfy elements of the EPA approved Environmental Management Plan of 7 January 2005;*
- *To increase system capacity to provide remote monitoring to (low risk) sites not monitored by current SCADA systems and to cater for future increases in site numbers;*
- *To provide automated preventative control actions that will reduce the likelihood of overflow events;*
- *To reduce operational and maintenance costs by providing a common and robust SCADA system servicing water and sewer networks in Redcliffe and Caboolture districts with facility to integrate the Pine System. This will enable the establishment of an effective single control centre for the entire region;*

- *To assist in effective asset management by providing accurate recording and secure storage of process data that can be readily retrieved and analysed, and*
- *To facilitate future integration of operations and maintenance functions with Sunshine Coast Regional Council networks and SCADA systems."* (Moreton Bay Regional Council, 11 August 2009)

Licence conditions from each of the previous Water Service Providers as they existed before July 2008, were transferred to Sunshine Coast Water and Moreton Bay Water in July 2008. These same Licence conditions were subsequently transferred to Unitywater on its formation in July 2010. These conditions required that the Water Service Providers maintain a view of the status of the assets with notification of potential sewer overflow situations and the maintenance of potable water pressure and flow. Each of the previous Water Service Provider addressed this requirement with telemetry solutions and SCADA implementations to gather information on the asset status, monitor and control the systems (Unitywater, 5 July 2013).

Unitywater currently operates 11 separate SCADA systems that are used to monitor and control the Northern and Southern region sewer and water network assets, totalling 871 sites. These assets include sewage pump stations, sewer mains, water pump stations and water mains spanning the former Redcliffe, Pine, Caboolture, Caloundra, Maroochy and Noosa regional councils (Unitywater, 5 July 2013).

The implementation of the SCADA Improvement Program will provide consistency of Human Machine Interfaces (HMI) both at sites and in the control rooms. The project will provide consistency in control and operating parameters for control and activation of alarms, parameters assigned to pump start and stop, and other site control points. Sunshine Coast Water and Moreton Bay Water maintained different parameters for control and for providing advice to operations personnel. For example, a SCADA application HMI in one environment would indicate red for a pump run while the other would show a pump run as green (Unitywater, 5 July 2013)/

Each of the 11 separate SCADA systems have licensing costs associated with them, ie spectrum licences and SCADA server licences. Unitywater states that it is currently maintaining the following infrastructure and support until the new SCADA system is fully implemented:

- Support for SWIFT Telemetry - $60,000 per year
- Australian Communications and Media Authority (ACMA) licences - $67,137 per year
- Superseded SCADA software licences - $45,674 per year

This will equate to a saving of approximately $173,000 per year on infrastructure and support services following the completion of the SCAD project. Clarification on the potential reduction of staffing requirements has not been quantified.

In addition, Unitywater states that most of the legacy systems are approaching the end of their serviceable life. The Pine Regional SCADA System (SWIFT) was earmarked for renewal due to being at end of its service life and had problems with support.

Unitywater identified a number of other drivers for the SCADA Improvement & Integration Program, these included:

- To reduce operational risk through:
  - Increased remote monitoring
  - Increased availability of spares
  - "In depth" security principles and data management philosophy with fewer points of failure, improved functionality and greater levels of redundancy
- To improve operational efficiency through:
  - Standardised instrumentation and control philosophies requiring personnel to have knowledge of fewer systems
  - Cost savings by way of "time of use" electrical load shifting and pump operating efficiency improvements across the majority of the distribution pump stations

- A unified, consistent, automated mode of operation throughout Unitywater's distribution network
- The ability to transition to a single centralised control centre

SKM is satisfied that the project will result in a consistent platform for the operation of the SCADA network across the Unitywater service area and should result in long term business efficiency. SKM consider that the drivers of compliance, improvement and renewal are all relevant to this project and support the need for the project.

E.5 The scope of works

E.5.1 Solutions development

Unitywater states that the SCADA Improvement project is a legacy project transferred to Unitywater at establishment. Options, procurement, and selection processes were completed by Sunshine Coast Water and Moreton Bay Water under the applicable governance and processes of those organisations. (Unitywater, 5 July 2013)

According to the Co-ordination Committee Meeting (Moreton Bay Regional Council, 11 August 2009):

> *"In 2007 the former Caboolture Shire Council approved the seeking of expressions of interest for the Caboolture district upgrade works. Fourteen (14) responses were received to the Expression of Interest in December 2007, from which a shortlist of three was selected."*
>
> *"The Tender Specification for the SCADA and Telemetry Upgrade works was initially issued to the shortlisted companies in September 2008 and tenders called. This specification covered upgrade works for both Caboolture and Redcliffe districts of the newly formed MBRC. Tenders were received from the three shortlisted companies in October 2008.*
>
> *In December 2008 tenderers were advised that the tender evaluation period would be extended to allow Council to give further consideration to the water reform process and that an addendum to the Specification was being prepared. The addendum detailed enhanced technical requirements arising from workshops with SCRC and increased the project scope to include upgrade of Pine district radio equipment. The addendum was issued to all short-listed tenderers in March 2009 with revised tenders being received by April 2009 from each of the shortlisted companies"*
>
> *"The tenders were assessed by a panel of three council officers and one consultant (Parson Brinckerhoff Australia Pty Ltd) against the nominated selection criteria."*
>
> *The criteria used to evaluate tenders was:*

Criterion	***Weighting***
Price	*35%*
Company Profile	*10%*
Staff Experience	*15%*
Project Execution	*25%*
Quality of Product	*15%*

> *"tender prices and scores for each tender against non-price evaluation criteria were entered into the MBRC Tender Evaluation Spreadsheet which calculated the final 'Ranking' score for each tender. The offer submitted by iPower Solutions Pty Ltd achieved the highest ranking when evaluated against the five nominated selection criteria, and as such iPower was deemed the preferred tenderer*."

SKM notes that the Technical Specification issued with the Request for Tender did not prescribe a detailed design for the telemetry system, rather it provided functional and performance requirements. As a result a range

of solutions were offered. SKM understands that the new SCADA system proposed by iPower Solutions was ClearSCADA.

In September 2009, MBW entered into a contract with iPower Solutions, for the design, supply and installation and commissioning of a new SCADA System, ClearSCADA. Subsequently, in November 2009, SCW entered into a contract with iPower Solutions, for the design, supply, installation and commission of a new SCADA System, ClearSCADA. (Unitywater, 5 July 2013) It is noted that the contract was novated to Conneq iPower following their acquisition of iPower Solutions and then to Lend Lease following their acquisition of Conneq iPower.

The works to be delivered, as per the Significant Procurement Plan, were:

- A new SCADA system (both hardware and software development for an ultimate capacity of 1,500 water and sewer outstations)
- Design, supply and installation of a radio communication system for 34 sites
- Replacement of RTU's with associated site works for 902 water and sewer outstations (Unitywater, 21 March 2013)

Unitywater notes that the final capacity of the SCADA System includes 50% allowance for growth of outstations under the control and/or monitoring of new SCADA platform (ie 1,000 sites existing with expansion capability to 1,500 sites) with the system being defined to allow for expansion as required (Unitywater, 20 May 2011).

SKM notes that within the information provided there are discrepancies in the number of sites included in the program, as documented below in Table 116. Clarification is required from Unitywater in relation to the actual number of sites to be delivered in each Phase.

Table 116 : Comparison of sites to be delivered

Phase	Type	Significant Procurement Plan - Original packages[1]	Significant Procurement Plan - Revised packages[1]	May Monthly Report – Section 4.2 Outstation Cutover Progress Overview[2]	May Monthly Report – A.3 Phase 2 Cost Scenarios[3]
Phase 1	Pilot sites	61	61	61	NA
Phase 2.1	Outstations	128	128	250	253
	Communication Network sites	34	34	35	NA
Phase 2.2a	Outstations	343	370	151	151
Phase 2.2b	Outstations			219	99
Phase 2.3a	Outstations	370	326	84	84
Phase 2.3b	Outstations			137	219
Total	**Outstations**	**902**	**885**	**902**	**806**
	RTU's	**34**	**34**	**35**	**NA**
	All	**936**	**919**	**937**	**806**

[1] Significant Procurement Plan (Unitywater, March 2012, p. 4)

[2] SCADA Upgrade Program - Project Advisory Team - Monthly Report May 2013 (Unitywater, 14 June 2013, p. 7)

[3] SCADA Upgrade Program - Project Advisory Team - Monthly Report May 2013 (Unitywater, 14 June 2013, p. 13)

In response to the draft report Unitywater states that the 936 site in the Significant Procurement Plan - Original packages represents the May 2012 Board endorsed baseline; the 919 sites in the Significant Procurement Plan - Revised packages does not include the increase of +17 sites to Phase 2.1 (which = 936, therefore no discrepancy); the 937 sites in the May Monthly Report – Section 4.2 Outstation Cutover Progress Overview includes one communications site added to the scope through detailed design and contract variation processes

(hence baseline 936+1=937) and includes the transfer of 105 sites of minimal upgrade scope to Phase 2.1; and the 806 sites in the May Monthly Report – A.3 Phase 2 Cost Scenarios was taken out of context and does not include the communications network and phase 1 sites (which means 806+61+35=902) that were already under consideration in costs to complete or completed.

As this is a legacy project, Unitywater had no influence on the decision relating to which the new SCADA system was selected as it was decided prior to the formation of Unitywater. Whilst Unitywater had an opportunity to evaluate the decision making process and re-test the market subsequent to their formation, as a robust tendering process was undertaken by MBW, it is unlikely to have had a significantly different outcome.

ClearSCADA is a commercial grade SCADA system that is widely used in the water industry. ClearSCADA is used by a number of entities including Sydney Water. SKM is satisfied that the scope of works is appropriate for the project.

E.5.2 Project delivery

Unitywater inherited separate SCADA contracts to deliver systems in the North and South. These contracts shared common technical, functional and performance requirements which allows standardisation of hardware, system configurations and site programs. Prior to the formation of Unitywater, a strategic business decision was made by SCW to appoint the same SCADA integrator as the contractor engaged by MBW in order to promote standardisation in technology, products and design. (Unitywater, 3 November 2010)

SKM considers that the interaction between SCW and MBW to develop a common SCADA system prior to the formation of Unitywater was prudent.

In December 2011, Unitywater consolidated the two contract agreements post the transfer from the MBW and SCW into an Integrated Contract. The contract was renegotiated based on two separable portions, Separable Portion 1, known as “Phase 1”, and Separable Portion 2, known as “Phase 2”. (Unitywater, 21 March 2013)

Phase 1 included:

- Communication site designs
- Completion of northern pilot site (10 off)
- Completion of southern pilot site (10 off)
- Sewer design
- Water design
- Variation issued later for 31 additional pilot sewer sites and 10 additional water pilot sites (Unitywater, 21 March 2013)

Phase 2 was divided into three discrete packages, being:

- Phase 2.1 – Enable, cutover and commission 128 outstations; and all associated repeater and telemetry works at 34 communication sites
- Phase 2.2 - Enable, cutover and commission 343 outstations (increased to 370 outstations)
- Phases 2.3 – Enable, cutover and commission 370 outstations (decreased to 326 outstations) (Unitywater, 21 March 2013)

Phase 1 and Phase 2.1 were awarded to Lend Lease under the Integrated Contract.

Unitywater anticipated that under the Integrated Contract Lend Lease would achieve efficiencies by optimising their productive rates as they progressed through Phase 1 and Phase 2.1; however this has not been realised (Unitywater, 21 March 2013).

In order to maximise efficiency gains and realise benefits of the Integrated Contract, Unitywater decided to investigate the procurement options for future stages. SKM agrees with the decision to reconsider the strategy given the performance issues encountered with the contractor.

Unitywater considered the following procurement options for the delivery of the subsequent phases of the project:

- Option 1 – Award Phase 2.2 Lend Lease
- Option 2 – Open market advertise tender for Phase 2.2 (complete package)
- Option 3 – Award part of Phase 2.2 (sewer only) to Lend Lease initially and allocate additional water pilots for a subsequent pricing of water site, and allocate balance of Phase 2.2 if water pricing is reasonable
- Option 4 - Open market advertise tender for part of Phase 2.2 (sewer only), Lend Lease awarded part Phase 2.2 (water only)
- Option 5 – Award a subset of Phase 2.2 to Lend Lease (potentially 150 sites), Open market advertise tender for a subset of Phase 2.3 in parallel (approximately 80 sites) (Unitywater, 21 March 2013)

Option 5 was recommended as the preferred procurement strategy going forward as it offered the potential to accelerate the delivery of the works and create competitive tension with Lend Lease through comparative performance without the potential delays significant risks associated with awarding the complete Phase 2.2 works to a new contractor. The outcomes from the deliver will be used to determine the approach for the balance of Phase 2.2 and 2.3 works. (Unitywater, 21 March 2013)

A tender for the subset of Phase 2.3 (Phase 2.3a) was advertised via eTender on 5 April 2013 and at close, on 7 May 2013, ten submissions had been received. The scope of works tendered was for the cutover of 84 outstation sites in the Bribie and eastern Caboolture districts. The contract allowed for future scope expansion to cover additional outstation sites through separable portions being Phase 2.2b and Phase 2.3b. (Unitywater, 20 May 2011)

The tenders were evaluated on the following criteria and weightings:

- Price – 35%
- Track record and experience – 25%
- Project delivery methodology (including timing) – 20%
- Safety and the environment – 15%
- Contribution to local economy – 5% (Unitywater, 20 May 2011)

SKM has reviewed the criteria weightings. It is noted that price only comprises 35% of the score. However, given the experience with the current contractor, SKM accepts that the high weightings for track record and methodology are relevant to this project.

Based on the outcomes of the price and non-price evaluation the top four ranked tenders were MPA Engineering, J&P Richardson, ICA and Automation IT. These tenders were shortlisted. Further clarifications and a Best and Final Offer (BAFO) were sought from each shortlisted tender as well as an interview held. Subsequent to the clarifications, interviews and BAFOs, Automation IT ranked first overall with J&P Richardson second, MPA Engineering third and ICA fourth. (Unitywater, 20 May 2011)

Table 117 : Summary of tender evaluation (Unitywater, 20 May 2011)

Contractor	Final weighted score	BAFO – Lump Sum
Automation IT	91	$1,725,172
J&P Richardson	90	$2,275,741
MPA Engineering	87	$1,560,932

Contractor	Final weighted score	BAFO – Lump Sum
ICA	79	$2,180,321

Unitywater subsequently awarded the contract to Automation IT for a Lump Sum of $1,725,172. In addition, MPA Engineering and J&P Richardson were approved as prequalified suppliers for future outstation upgrade works for the project at their tendered rates for a period of 12 months. (Unitywater, 20 May 2011)

Unitywater subsequently issued Lend Lease a "Notice to Proceed" with part of Phase 2.2 (Phase 2.2a). Lend Lease submitted a formal offer of estimate of $4,590,593 for the 151 outstation sites. Unitywater notes that the fee proposed by Lend Lease for Phase 2.2a did not offer the savings Unitywater had anticipated would be achieved from efficiency gains from the work undertaken in Phase 2.1. Unitywater states that:

> *"The fee proposed by Lend lease for Phase 2.2a does not offer the savings Unitywater had anticipated would be achieved from efficiency gains from the work undertaken in Phase 2.1. A cost reduction of 10-15% was expected, whereas Unitywater staff have had to work hard to procure an offer from Lend Lease that did not increase the fee."* (Unitywater, 20 May 2011)

Unitywater that:

> *"part of Phase 2.2 (150 sites) will be awarded to Lend Lease in March 2013 to enable the project to transition from Phase 2.1 to Phase 2.2 without delay and maintain sufficient forward work for Len Lease to ensure resources are fully utilised."* (Unitywater, 21 March 2013)

SKM has compared the cost submitted by Lend Lease for Phase 2.2a with those received for Phase 2.3a, as outlined in Table 118. SKM understands that the work associated with Phase 2.2a and Phase 2.3a is very similar and as such the comparison of cost per outstation site should be relevant.

Table 118 : Comparison of Lend Lease and market tested prices

Contractor	Role	Proposed cost ($)	Number of sites to be delivered	Approximate cost per site ($/site)
Lend Lease*	Phase 2.2a	$4,590,593	151	$30,401
Automation IT†	Phase 2.3a	$1,725,172	84	$20,538
MPA Engineering †	Preferred prequalified supplier	$1,560,932	84	$18,583
J&P Richardson †	Prequalified supplier	$2,275,741	84	$27,092
			Average of Phase 2.3a tenders	$22,071

* From Contract Recommendation and Approval Report Form (Phase 2.2a) (Unitywater, 20 May 2011)

† From Contract Recommendation and Approval Report Form (Phase 2.3a) (Unitywater, 20 May 2011)

From Table 118 it can be seen there is a substantial difference between the price per site from the competitive market tender for the delivery of Phase 2.3a and that provided by Lend Lease for Phase 2.2a. Based on the market response, by accepting Lend Lease's estimate of $4.59 million for the delivery of 151 outstation sites Unitywater is accepting that are not delivering the works efficiently or at a rate that the rest of the market is willing to do it for.

SKM considers that the consolidation of the two original contract agreements into an Integrated Contract was an appropriate action. The subsequent change to the procurement strategy following poorer than expected performance from the incumbent contract indicates that Unitywater is seeking efficiency gains in the delivery of the project.

In response to SKM's Draft Report, Unitywater provided additional information relating to the award of the Lend Lease and Automation IT contracts, showing that the evaluation of tenders for Phase 2.2a was complete prior to the tendering of Phase 2.3a:

"UW002158 Lend Lease Contract:

Phase 1 – Terms Agreed 16/12/2011

Phase 2.1 – Awarded (Letter Of Intent) 4/5/2012

Phase 2.2a – Awarded (Letter Of Intent) 5/4/2013

- *Quote and evaluation period - 23/10/2012-3/4/2013**
- *Board Endorsed 24/4/2013*
- *Notice to Proceed 6/6/2013.*

**In order to provide competition to Lend Lease, tenders were advertised in parallel of award of reduced package of works to Lend Lease (phase 2.2a).*

UW330008 AIT Contract:

- *Tender and Evaluation period - 5/4/2013 – 13/6/2013*
- *Board endorsed - 13/6/2013*
- *Awarded (Letter Of Acceptance) 17/6/2013."*

In addition Unitywater states:

"The quantity of sites selected for each contract works package (i.e. Phases 2.2a and 2.3a) were determined in the SWOT analysis and risk assessment that informed the February 2013 and April 2013 Board papers... The quantity of sites was an estimate of the volume of work required to establish a reasonable timeframe for performance assessment of alternative contract delivery including lead times for new contractor ramp up, ample delivery to compare, and decision making processes for subsequent work.

The timing was also driven by the expectation that this strategy is to be implemented with limited impact on progress and the forecast completion date to avoid idle time and delays to the mobilised Unitywater project team. Any delay to completion of the overall program would not only protract the business's exposure to known operational risks but also lead to increased costs due to the overheads required to manage and administer this project (i.e. approx $130K per month). The exact sites selected within the Phase 2.2a works utilised the first 2 pre-determined priority groups (as previously provided in clarification response 2, Attachment M); these were:

- *Pine and Redcliffe district water and sewer sites*
- *Caloundra and Kawana catchment sewer sites (where not complete in Phase 2.1)*

This entire procurement strategy was closely scrutinised by the April 2013 Capital Works committee to which they arrived at 'Decision 32' in support of Lend Lease's appointment to Phase 2.2a works. The following is an extract of the minutes from that meeting which summarises discussions and determinations surrounding the risk of the appointment:

> *"It is possible to install an alternative provider for Phase 2.2a. However, in circumstances where a mobilised project overhead exists, there are risks to budget and schedule. These risks have been considered as part of recommending the award of the contract for Phase 2.2a to Lend Lease in accordance with the Significant Procurement Plan. Other risks include the fact that better performance from a new provider is not guaranteed and that changing providers by severing the outstation work would break the chain of responsibility for work in the communications network..."*

It also needs to be understood that Phase 2.2a scope with Lend Lease includes in addition to sewer the more expensive and difficult water site scope and system wide defect management, whereas the Phase 2.3a works with AIT only includes sewer site cutovers – the two average costs if using gross averages are

not like for like comparisons. Therefore any conclusions around reducing the forecast cost to complete on this basis would be inaccurate."

SKM considers the decision to award Phase 2.3a to Automation IT an appropriate action and that a robust tender evaluation process was followed. SKM considers the decision to award Phase 2.2a to Lend Lease appropriate given the timing and risk considerations. SKM notes however that there is a material difference in the estimated cost per site for the work ($30,401 for Lend Lease as compared to $20,538 per site for Automation IT) and would expect that if Automation IT perform as promised they will be awarded subsequent components of the project.

In response to a query by SKM regarding clarification on how the project is to proceed, Unitywater stated:

The Project Team advised the Board in March 2013 that appointment of an additional contractor in July 2013 is intended to improve the productivity of the project delivery. Productivity from the first contractor is delivering at approximately 60% of the expectation of Unitywater to achieve the broader program delivery schedule.

The board has been advised that next step will be to evaluate the performance of both providers in September 2013. This will allow the new contractor to establish a likely productivity rate. The combined productivity rate will be assessed and projected against overall project delivery and considered with respect to the other project key performance indicators of each contractor. Unitywater will then be able to make an informed decision on the likelihood of achieving of the project schedule and have greater certainty regarding forecast costs to complete.

In the event the productivity rate is not supporting Unitywater's required schedule, a third contractor could be appointed from a prequalified list. A subsequent quarter of delivery would be assessed and further informed decisions can be made depending on the risks at that point of delivery. In the event of the appointment of a third contractor, the first and second contractors potential scope allocations would be reassessed with the potential of withdrawal and/or reassignment. (Unitywater, 23 July 2013)

All works are forecast to be complete in August 2014. With two contractors working on the delivery of the works, and an additional two contractors prequalified for future works, SKM anticipates the works will be able to be completed as scheduled.

E.6 Standards of service

Unitywater advised that the work is being completed in accordance with their Technical Specification for SCADA and Telemetry Outstation Upgrade. This technical specification has been developed based on relevant Australian Standard specifications, relevant Institute of Electrical and Electronics Engineers (IEEE) specifications and relevant Acts and Regulations.

In SKM's opinion, the Technical Specification for SCADA and Telemetry Outstation Upgrade describes industry standards that are appropriate for the application and does not include anything indicative of unusual or expensive requirements.

E.7 Project cost

The cost of the SCADA Improvement project is summarised in **Table 119**, current at May 2013.

Table 119 : Current project cost (Unitywater, 5 July 2013)

Component	Value of Work to Date ($'000)	Estimate to Complete ($'000)	Forecast Final Cost ($'000)	Forecast Final Cost Percentage of Direct Costs (%)
Project management	$4,217	$1,884	$6,101	27
Authority	$0	$2	$2	0

Component	Value of Work to Date ($'000)	Estimate to Complete ($'000)	Forecast Final Cost ($'000)	Forecast Final Cost Percentage of Direct Costs (%)
Design	$5,616	$446	$6,062	26
Construction	$8,445	$14,574	$23,019	100
Commissioning	$62	$9	$71	0
Contingencies	$0	$1,000	$1,000	4
Subtotal	**$18,340**	**$17,914**	**$36,254**	**-**

Note: Where direct costs are those associated with construction and commissioning

SKM notes that the project management costs are approximately 27% of the direct costs, which is much higher than would be expected. SKM would have expected project management costs in the order of 10%. The high project management costs are likely to be a reflection of the difficulties experienced to date with inappropriate contract conditions and management of variations submitted by Lend Lease and the large volumes of number of sites to be managed.

SKM also notes that the design costs for this project are proportionally high. Again, this is reflective of the large number of brownfield sites.

The contingency allowance for this project is low. In response to the draft report Unitywater states that:

> *"It is acknowledged the contingency is lower than anticipated and this is a known risk to the project. The contingency has been reduced due to the following factors:*
>
> - *Progressing well into construction phase (>25% complete).*
> - *With the Lend Lease contract, much of the contingency has been reallocated given the actual contingent allowance and Guaranteed Maximum Price in that contract.*
> - *Contingent spend or allocation (with forecast costs currently exceeding budget)."*

The Forecast Final Cost has been developed base on the likely cost scenario for the completion of the works from the Monthly Report May 2013, as outlined in Table 120.

Table 120 : Breakdown of current project cost (Unitywater, 14 June 2013)

Component	Contractor	Number of sites	Cost per site ($/site)	Forecast Total cost ($)
Phase 2.1	Lend Lease	253	Fixed	$7,200
Phase 2.2a	Lend Lease	151	$27,500	$4,153
Phase 2.2b	Mixed (AIT & LL)	99	$25,025	$2,477
Phase 2.3a	AIT (+10%)	84	$22,550	$1,894
Phase 2.3b	AIT (+10%)	219	$22,550	$4,938
			Sub-Total	**$20,663**
			Resources	$6,101
			Other costs to date	$9,491
			Total	**$36,254**

No explanation of the 'Other costs to date' was provided in the Monthly Report May 2013. In response to the draft report Unitywater states that *"Other costs are all other project costs (exclusive of phase 2 works to complete) expended to date. These costs include PM, design, contingency, and authority costs."*

SKM notes that for Phase 2.2a Unitywater has used a contract value of $4,152,500 for the delivery of the 151 sites, resulting in $27,500 per site. SKM however notes that the accepted contract value was $4,590,593, resulting in $30,401 per site.

The currently committed work packages are outlined in Table 121.

Table 121 : Current committed works packages (Unitywater, 5 July 2013)

Works Package	Contractor	Tender Approach	Approved amount ($'000) (ex GST)
Pre-existing contracts	iPower Solutions (MBW)	Open Tender	$4,255
	iPower Solutions (SCW)	Negotiated	$5,488
Phase 1	Conneq iPower	Renegotiated	$2,713
Phase 2.1	Lend Lease Infrastructure Services	Renegotiated	$6,996
Phase 2.2a	Lend Lease Infrastructure Services	Renegotiated	$4,591
Phase 2.3a	Automation IT	Open Tender	$1,725

From the SCADA Program Monthly Report for May 2013 (Unitywater, 14 June 2013), Lend Lease has complete 207 sites and at a cost of approximately $6.23 million, which equates to approximately $30,000 per site. Based on Lend Lease's proposed expenditure for the portion of Phase 2.2 recently awarded of $4.6 million for the delivery of 151 sites, the proposed expenditure per site, of approximately $30,400, is higher than that historically delivered.

In response to the draft report Unitywater states that:

> *"Phase 2.1 includes communications network scope, sewer outstations and excludes water outstations. Whereas Phase 2.2 only includes sewer and water outstation cutovers but excludes communications network. These are significantly different scopes of work"*

SKM accept that the comparison of cost per site for Lend Lease's historically delivered work for Phase 2.1 with Lend Lease's proposed cost per site for Phase 2.2a is not relevant.

Table 122 presents the estimated cost to complete based on Unitywater's committed expenditure, estimated forecast costs and expected project management and contingency costs.

Table 122 : Estimated costs complete - Unitywater

Component	Approved Contract Value ($'000)	Anticipated Contract Value ($'000)	Actual value of work completed	Estimated value of remaining work
Phase 1	$2,713	–	$2,713	$0
Phase 2.1	$6,996	–	$6,226	$770
Phase 2.2a	$4,591	–	$0	$4,591
Phase 2.2b	–	$2,477	$0	$2,477
Phase 2.3a	$1,725	–	$0	$1,725
Phase 2.3b	–	$4,938	$0	$4,938
Sub-Total	**$16,025**	**$7,416**	**$8,939**	**$14,502**
Project management @ 15% of direct costs	$2,404	$1,112	$1,341	$2,175
Contingencies @ 10% of direct costs	$1,603	$742	$894	$1,450
Authority	$2	–	–	–
Total	**$20,033**	**$9,270**	**$11,174**	**$18,127**

Table 123 presents the estimated cost to complete based on Unitywater's committed expenditure, estimated forecast costs and expected project management and contingency costs.

The project costs outlined in Table 123 were developed based on SKM's understanding of committed funds for the project, the assumption that Automation IT will deliver the remainder of the future works, project management and contingencies. As noted earlier the project management costs for the project are much higher

than would be expected, as such proposed that they be reduced to 15% of the direct costs. SKM has increased the contingency allowance for the project to 10%.

Table 123 : Estimated costs complete - SKM

Component	Approved Contract Value ($'000)	Anticipated Contract Value ($'000)	Actual value of work completed*	Estimated value of remaining work ($'000)
Phase 1	$2,713	–	$2,713	$0
Phase 2.1	$6,996	–	$6,226	$770
Phase 2.2a	$4,591	–	$0	$4,591
Phase 2.2b	–	$2,033	$0	$2,033
Phase 2.3a	$1,725	–	$0	$1,725
Phase 2.3b	–	$4,498	$0	$4,498
Sub-Total	**$16,025**	**$6,531**	**$8,939**	**$13,617**
Project management @ 15% of direct costs	$2,404	$980	$1,341	$2,042
Contingencies @ 10% of direct costs	$1,603	$653	$894	$1,362
Authority	$2	–	–	–
Total	**$20,033**	**$8,164**	**$11,174**	**$17,021**

From comparison of the totals from Table 122 and Table 123 there is a difference of approximately $1.11 million.

Table 124 : Comparison of Unitywater current project cost and SKM's estimated project costs ($'000)

Component	Unitywater estimated value of remaining work	SKM estimated value of remaining work	Difference	
			Value	Percentage
Estimated value of remaining work	18,127	17,021	-1,106	-6%

SKM proposes that a value of $17.02 million be adopted by the Authority as the cost to complete the SCADA Improvement Program over 2013-14 and 2014-15.

As this number is higher than the value originally submitted by Unitywater, SKM suggests that the lower number be adopted until the variation can be resolved.

E.8 Efficiency gains

Unitywater states that efficiencies in the operation of the Control Room should results from the implementation of the project.

E.9 Implications for operating expenditure

Unitywater expects that there will be reduced operational and maintenance costs through having a common and robust SCADA system. Unitywater expects a reduction in the spectrum licence and SCADA server licence in the order of approximately $173,000 per year.

E.10 Policies and procedures

Table 125 below identifies how the project has complied with the appropriate policies and procedures.

Table 125 : C9089 SCADA Improvement & Integration Program compliance with the Authority's criteria

Initiative	Achievement (Yes/No/Partial)	Comment
Consideration of prudency and efficiency of capital expenditure from a regional (whole-of-entity and whole-of-sector) perspective	Yes	This is an entity wide program with collaboration between SRC and MBRC occurred in the early stages of the project prior to the formation of Unitywater.
Consideration of alternative investments, the substitution possibilities between operating costs and capital expenditure, and non-network alternatives such as demand management.	N/A	No evidence of the cost/benefit analysis (eg additional operational staff required) has been provided. However, this would be irrelevant in systems requiring replacement.
A standardised approach to cost estimating, including a standardised approach to estimates for items such as contingency, preliminary and general items, design fees and contractor margins, so that there is uniformity of cost estimating across all proposed major projects	No	Costs for the project have been developed based on actuals or forecasted costs from recently completed work, which is an acceptable practice. No standard percentages for design or contingency have been applied.
A summary document to be prepared for identified major projects so as to facilitate standardised reporting	Yes	A Major Business Case was provided.
An implementation strategy to be developed for each major project	Yes	The Strategic Procurement Plan outlines how the project is to be implemented.
A 'toll gate' or 'gateway' review process to be implemented so that appropriate reviews are undertaken at milestone stages for selected projects	Yes	Gate 1: • Project Needs Analysis – conducted by Councils prior to Unitywater Gate 2: • Major Business Case – carried out under document titled "Project Brief" sent for Board approval October 2010 • Varied by paper to Capital Works and Board Committees in May 2012 Gate 3: • Approval of Significant Procurement Plan February 2013 • Approval of various Contract Recommendation and Approval Reports
Information on the compatibility with existing and adjacent infrastructure and consideration of modern engineering equivalents and technologies.	Yes	As the sites are generally brownfield sites the need to integrate existing and modern technology has been considered.
Includes only commissioned capital expenditure from 1 July 2010 in the regulatory asset base (RAB) and therefore prices	No	Unitywater states that capital projects are added to the RAB on an as commissioned basis. Based on the information provided, it is not possible for SKM to make a clear determination as to whether the RAB only includes commissioned capital expenditure from 1 July 2010.

The documentation reviewed for this project is generally in line with Unitywater's capital delivery processes (eg Project Brief and Minutes of Asset Steering Committee, Project Decision Paper - Capital Works Committee, Contract Recommendation and Approval Report Form for each phase of the works, and Monthly Reports). SKM notes that no Needs Analysis Report or Business Case has been provided for this project. However, as this project was initiated by the Councils, these processes would have been expected to occur during this period. If completed correctly, these documents would have demonstrated the prudency of this project.

This project has demonstrated that there may be deficiencies in project processes inherited from Councils. However, as detailed above, Unitywater has revisited the market where required in order to improve the efficiency of the project delivery.

E.11 Prudency and efficiency summary

SKM is satisfied that the project will result in a consistent platform for the operation of the SCADA network across the Unitywater service area and should result in long term business efficiency. SKM consider that the drivers of compliance, improvement and renewal are all relevant to this project and support the need for the project.

As this is a legacy project, Unitywater had no influence on the decision relating to which the new SCADA system was selected as it was decided prior to the formation of Unitywater. However, ClearSCADA is a commercial grade SCADA system that is widely used in the water industry, including Sydney Water. SKM is satisfied that the scope of works is appropriate for the project.

SKM considers that historically the project has not been delivered efficiently as it appears to have been subject to a number of changes that have caused issues around timing and costs. However, SKM considers that the consolidation of the two original contract agreements into an Integrated Contract was an appropriate action. The subsequent change to the procurement strategy, following poor performance from the incumbent contractor, indicates that Unitywater is seeking efficiency gains in the delivery of the project.

SKM considers the decision to award Phase 2.3a to Automation IT appropriate following a robust tender evaluation. SKM considers the decision to award Phase 2.2a to Lend Lease appropriate given the timing and risk considerations.

All works are forecast to be completion in August 2014. With two contractors working on the delivery of the works, and an additional two contractors prequalified for future works, SKM anticipate the works will be able to be completed as scheduled.

In SKM's opinion, the Technical Specification for SCADA and Telemetry Outstation Upgrade describes industry standards that are appropriate for the application and does not include anything indicative of unusual or expensive requirements.

The estimated value of remaining work for the project was developed based SKM's understanding of committed funds for the project, the revised cost per site for Phase 2.2a, the assumption that Automation IT will deliver the remainder of the future works, and assumptions relating to project management and contingencies percentages. SKM's order of magnitude estimate was approximately $1.11 million less than the estimated value of remaining work developed based on information provided by Unitywater. As SKM's estimated value of remaining work is higher than the value originally submitted by Unitywater, SKM suggests that the lower number be adopted until the variation can be resolved.

E.12 Assessment of reported expenditure

Table 126 below identifies the proposed capital expenditure for C9089 SCADA Improvement & Integration Program.

Table 126 : C9089 SCADA Improvement & Integration Program proposed capital expenditure

Project	2013-14 ($'000)	2014-15 ($'000)	Total ($'000)
C9089 SCADA Improvement & Integration Program[1]	12,572	3,572	16,144
SKM proposed value	12,572	3,572	16,144
Variation	0	0	0

[1] QCA Templates - UW 2013-15 Regulatory Submission.xls (Unitywater, 2013)

Note: Figures are "as incurred" expenditure and exclude any allowance for capital overhead or borrowing (interest) costs.

E.13 Extrapolation to other projects

SKM does not consider that the findings from this project can be extrapolated to other projects.

Appendix F. C9993 Fleet – trucks

F.1 Project description

Unitywater's Plant and Fleet Asset base was established from assets identified by Moreton Bay Regional Council (MBRC) and Sunshine Coast Regional Council (SCRC) as being used by their respective water businesses. These assets were transferred to Unitywater as a result of the establishment of the company.

Unitywater's current plant and fleet asset holdings are summarised in below Table 127.

Table 127 : Asset Holdings (Unitywater, May 2011)

Vehicle Type	Passenger	Utilities	Trucks	Heavy Plant
Total at July 2010 Transfer	69	275	98	156
Total at June 2013	44	252	93	138

At the time of creation of Unitywater, SCRC's policy was to lease assets under 15 tonnes gross vehicle mass (GVM). These lease contracts are with three lease companies:

- ORIX
- Custom Fleet Leasing
- Toyota Financial Services

On establishment of Unitywater, the leases were transferred with the vehicles to Unitywater and as such Unitywater now manages the lease agreements for these assets.

The Plant and Fleet Asset Replacement Program will replace plant and fleet assets that have passed the end of their lease agreement or have passed their optimal replacement points. Unitywater's Fleet – Trucks program was selected for review by the Authority. The program is replacing 39 (23 + 16) trucks in the 2013-15 period.

F.2 Proposed capital expenditure

Table 128 shows the proposed cost of the C9993 Fleet - Trucks within the 2013/15 budgets.

Table 128 : C9993 Fleet – Trucks proposed capital expenditure ($'000s)

Source	Previous years ($'000)	2013-14 ($'000)	2014-15 ($'000)	Subsequent years ($'000)	2013-15 Total ($'000)
QCA Template[1]	758	4,862	3,880	4,860	8,742
RFI UW 01-06/03 Response[2]	-	5,675	2,880	4,860	8,555

[1] QCA Templates - UW 2013-15 Regulatory Submission.xls (Unitywater, 2013)

[2] 2013/15 Price Monitoring Review - Request for Information - Unitywater Response Fleet Trucks C9993, Unitywater, 15 July 2013 (Unitywater, 15 July 2013)

Note: Figures are "as incurred" expenditure and exclude any allowance for capital overhead or borrowing (interest) costs.

There is a variation of approximately $187,000 between the QCA Template ($8,742,275) and the RFI UW 01-06/03 Response ($8,555,000). This difference has not been explained by Unitywater.

F.3 Documentation reviewed

The key reference documents used for this review are:

- *QCA Templates - UW 2013-15 Regulatory Submission.xls*, Unitywater, June 2013 (Unitywater, 2013)

- 2013/15 Price Monitoring Review - Request for Information - Unitywater Response Fleet Trucks C9993, Unitywater, 15 July 2013 (Unitywater, May 2011)
- *Major Business Case – Plant and Fleet Asset Replacement Program*, Unitywater, 15 July 2013 (Unitywater, 15 July 2013)
- *Fleet Replacement Due 13-14 Capital,* Unity Water, Date Unknown (Unitywater)
- *Plant & Fleet Asset Procurement Form,* Unitywater, 8 May 2013 (Unitywater, 8 May 2013)
- *Plant and Fleet Management Guide*, Unitywater, 20 February 2012 (Unitywater, 20 February 2012)
- *Invoice for Truck T1135,* Madill Izuzu, 30 April 2013 (Madill Izuzu, 30 April 2013)
- *Invoice for Truck T1141,* Madill Izuzu 26 June 2013 (Madill Izuzu, 26 June 2013)
- *Invoice for Truck T1142,* Madill Izuzu, 26 June 2013 (Madill Izuzu, 26 June 2013)
- *Fleet Replacement Five Year Forecast*, Unitywater, Date Unknown (Unitywater)
- *Category Management Plan for Fleet Management*, Unitywater, 6 March 2013 (Unitywater, 6 March 2013)
- *Motor Vehicles Management Policy* (Unitywater, 16 December 2011)

F.4 Key drivers

The identified driver for this project is renewal. The fleet function is vital to Unitywater's ability to achieve business objectives in meeting the needs of its customers. The importance of an effectively and efficiently managed fleet is imperative to maintaining a mobile and responsive fleet of field operators and crews. In order to ensure a level of efficiency and reliability within the pool of vehicles, the establishment of service and supply arrangements for critical fleet components is necessary. Key drivers for an effective fleet function include:

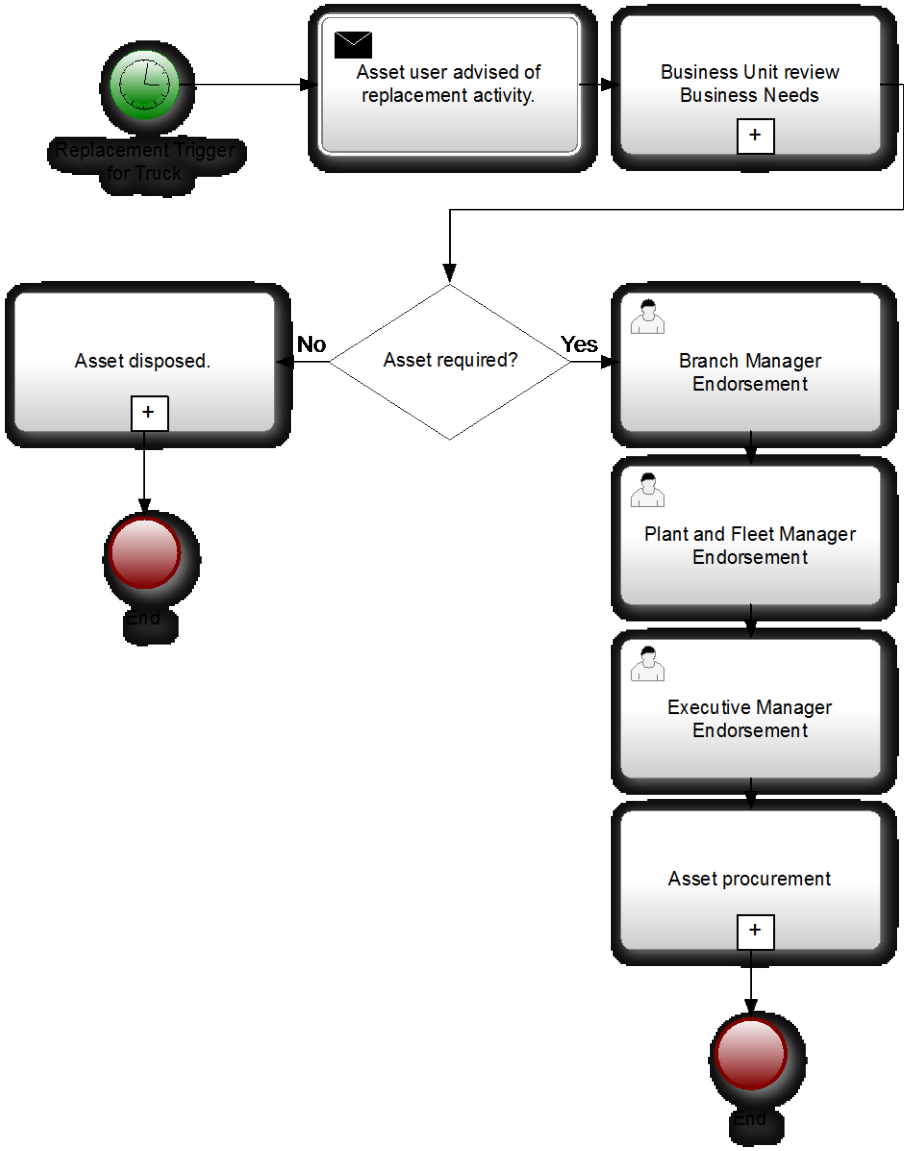
- Reliability of supply and services
- Safety and environment
- Need for fit-for-purpose vehicles and equipment
- Reduction in unscheduled services and repairs
- Reduction in unscheduled costs for new vehicles
- Fulfilment of organisational and HR obligations (Unitywater, 6 March 2013)

The need for expenditure is justified in that if the program does not occur:

- Vehicles held past their optimal disposal point may realise a loss in value
- There is a risk that Unitywater will not be able to attend to faults or transport equipment and tools to work sites
- Retention of existing assets will cause servicing and maintenance costs to increase, and efficiencies associated with new equipment will not be realised
- Asset hire charges will increase, thereby increasing costs

For a truck to be included in the replacement program, a multi path approach to approvals is followed. Initially the operation crew is asked to evaluate the relevance of the asset to the business needs of the crew. The crew and business unit identify the standard body required for the replacement asset and accept the cost of ownership. The authority to accept these charges is signed off at both Branch and Divisional Management level to validate the expenditure. Plant and Fleet then add the asset to the replacement program. (Unitywater, 6 March 2013) This is outlined below in Figure 6-4.

Figure 6-4 : Asset replacement approvals multi path approach (Unitywater, 15 July 2013)



The primary driver of renewal has been demonstrated. The review and justification of the need of the truck in the future, prior to inclusion in the replacement program, is appropriate.

F.5 The scope of works

F.5.1 Solutions development

Unitywater examined four options for the replacement of fleet including:

- Option 1 - 'Do Nothing'
- Option 2 - Programmed replacement
- Option 3 - Operating lease (Unitywater, May 2011)

Option 1 was excluded as, once the trucks pass their optimal replacement points, servicing and maintenance costs will increase, fuel consumption will increase and the capital recovery will be reduced substantially as the values of the assets are depreciated. (Unitywater, May 2011)

Option 3 was excluded due to Unitywater's belief that leasing of trucks does not satisfy the key criteria of the Queensland Treasury's "Leasing in the Queensland Public Sector; Policy Guidelines". These guidelines specify the criteria for purchase/lease decisions based on prudent financial management. The key criteria are:

- Best return on the investment considering the total cost of ownership of the asset
- Total value of the lease option is not greater than 5% of the net present value of the total value of the purchase option (Unitywater, May 2011)

Option 2 was selected as the preferred option as Unitywater determined that it provided the best value for money and met Unitywater's various policies, and legislative and regulatory requirements (Unitywater, May 2011).

Renewals of vehicles are based on optimum replacement points. Optimum replacement points are calculated to estimate the optimal point in hours run or kilometres travelled to replace the asset to achieve the lowest average annual cost.

The optimum replacement points are calculated using the:

- Purchase price of the asset
- Resale values over the expected life of the asset (minimum of 10 years)
- Finance costs over the expected life of the asset (minimum of 10 years)
- Servicing and maintenance costs over the expected life of the asset (minimum of 10 years)
- Downtime costs for the asset (including operator displacement, opportunity costs, and standing cost of potentially held up works)

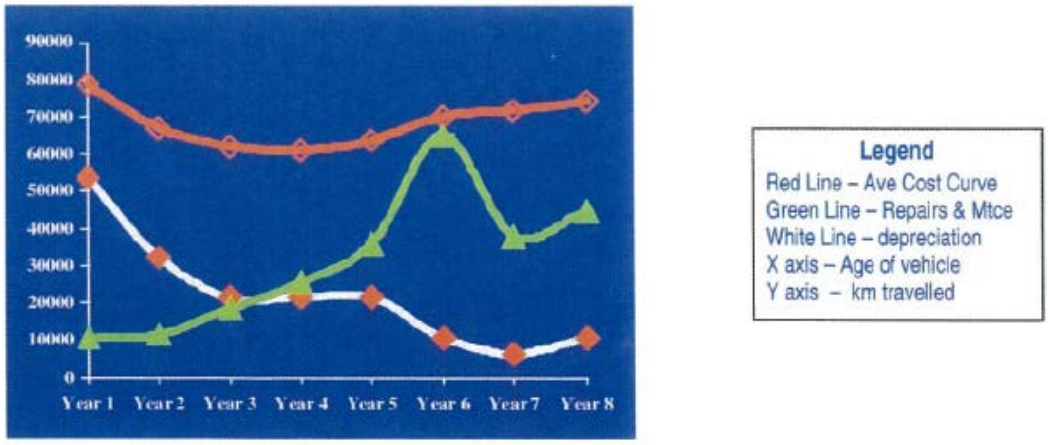
When graphed, the optimal replacement point is the point in time where the decreasing line of depreciation intersects with the increasing line of servicing and maintenance.

This information is used to calculate the Optimal Replacement Points are as follows:

- Average cost curve
- Servicing and maintenance costs
- Asset depreciation

This information is plotted against the age of the asset (x axis) and the distance travelled or hours used (y axis). The optimal replacement point is the point in time where the decreasing line of depreciation insects with the increasing line of Servicing and Maintenance. (Unitywater, May 2011).

Figure 6-5 : Example Optimal Replacement Point plot (Unitywater, May 2011)



SKM agrees with the general methodology adopted however only an example plot has been provided and it is uncertain how the elements have been determined, eg the basis of non-linear depreciation. In addition no evidence has been provided by Unitywater of the actual application of the plot.

Unitywater has also adopted the following standard industry asset management life set points as maximum life replacement triggers:

- Trucks up to 15 tonnes GVM – 6 years or 150,000 km
- Trucks over 15 tonnes GVM – 8 years or 200,000 km

Unitywater states that the trigger for replacement of trucks over 15 tonnes GVM was established using the *Plant and Vehicle Management Manual* developed by the Institute of Public Works Engineering Australia Limited (IPWEA) (Institute of Public Works Engineering Australia Limited) and that the trigger for replacement of trucks up to 15 tonnes GVM was established using accepted industry standards and feedback from auction houses used to dispose of Plant and Fleet Assets (Unitywater, May 2011). SKM has not reviewed the *Plant and Vehicle Management Manual*.

The Chapter 2 - Effective life of assets declining in value of the Tax Laws Amendment (2005 Measures No. 1) Act 2005 (Australian Tax Office, 2005) states that for trucks, having a gross vehicle mass greater than 3.5 tonnes, the capped effective life is 7.5 years. The effective life of an asset is the length of time over which an entity could reasonably be expected to use the particular asset for taxable purposes or for the purpose of producing exempt income (Australian Tax Office, 2005).

The number of vehicles to be replaced, determined through the above process, are outlined below in Table 129.

Table 129 : 2011 Forecast Asset Renewal Summary for 5 Years - Trucks

Source	Component	2011-12	2012-13	2013-14	2014-15	2015-16
Business Case[1]	Total Replacements	16	9	13	20	8
	Average Unit Price	$85,208	$93,572	$90,767	$127,766	$102,014
Unitywater Response Fleet Trucks C9993[2]	Total Replacements	-	-	23	16	3
	Average Unit Price	-	-	$177,343	$180,000	$180,000

[1] Major Business Case - Plant and Fleet Asset Replacement Program (Unitywater, May 2011)

[2] 2013/15 Price Monitoring Review - Request for Information - Unitywater Response Fleet Trucks C9993 (Unitywater, 15 July 2013)

SKM has reviewed the documentation provided and accepts that 23 trucks meet the maximum life replacement criteria in the 2013-14, as at 30th June 2013. For the 2014-15 financial year, SKM has identified that 12 trucks

will meet the trigger criteria for replacement, as at 30th June 2014. The kilometres travelled as at 30th June 2014 were determined based on the kilometres travelled to date plus the yearly historic kilometres travelled. It is noted that an additional five trucks are close to the trigger criteria for replacement as at 30th June 2014; however these have not been included at this time. It is understood that the actual number of trucks to be replaced be 2014-15 will be re-evaluated closer to the time of replacement. In addition to the 12 trucks which meet the trigger criteria for replacement for 2014-15, there are an additional 4 trucks for which the leases will expire in early 2014. Based on the information provided by Unitywater, SKM understand that although the leases for the trucks expire in 2013-14 new trucks will be purchased in 2014-15.

SKM agrees with the replacement of the 23 trucks and 16 trucks included in the budget for replacement in 2013-14 and 2014-15 respectively.

Table 129 shows that there is a significant difference between not only the number of vehicles to be replaced in 2013-14 but also in the average unit price. In relation to the increased number of trucks to be replaced, it has been identified that in 2012-13 a number of assets were ordered but not yet delivered (valued at $1.5 million), these have been brought into the 2013-14 financial year budget (Unitywater, 15 July 2013).

The increase in the average unit price is attributed to additional costs associated with the standardisation of truck bodies. The 2011 Business Case forecast did not consider the cost of the bodies, as the process of specification of truck bodies had not been instigated at the time of development.

The standardisation of assets is a key activity of the Plant and Fleet Section. A set of standard body designs for utilities and trucks were developed in consultation with the business users. The prime intention of this process is to have a set of bodies that are readily able to be transferred from a vehicle tagged for disposal on to the replacement vehicle (Unitywater, May 2011).

Unitywater states that additional benefits gained through the adoption of standardised bodies on trucks includes the reduction of inventory holdings on trucks, consistency of tooling on trucks, greater efficiency, as Unitywater personnel know that the required equipment will be in the same place on each truck (Unitywater, 15 July 2013). Additionally, standardised bodies sets will simplify the maintenance and servicing requirements for any service contracts that Plant and Fleet enter into for asset maintenance (Unitywater, 15 July 2013).

The use of standardised bodies has been implemented by other water entities in Australia, including Yarra Valley Water and Melbourne Water. Unitywater initially purchased three bodies to trial. Working groups were developed to gather feedback from staff including suggestions for improvements. The proposed asset life for standardised bodies has been requested.

Based on the documentation provided, SKM is satisfied that suitable options have been reviewed and the selected option is the most suitable option.

F.5.2 Project delivery

Trucks are to be purchased via the Local Buy Pty Ltd panel arrangements. Local Buy Pty Ltd is a wholly owned company of the Local Government Association of Queensland (LGAQ). Local Buy Pty Ltd maintains panel arrangements for most services utilised by Local Government in Queensland. The purchasing power of this panel leverages off the size of the truck fleet owned and operated by Local Government throughout Queensland. Unitywater considers it likely that it would achieve a better-cost option with the size of fleet it maintains. (Unitywater, 15 July 2013)

Unitywater states that orders for fleet are placed in blocks where the efficiency of the internal process allows.

To validate this consideration, Unitywater states that they went to market with an Expression of Interest for fleet asset replacement and the response received does not indicate that there is a more cost effective option to the Local Buy Pty Ltd panel (Unitywater, 15 July 2013). No evidence of this process has been provided.

The purchase of the standard body is included in the purchase of the truck cab chassis, putting the onus and responsibility for compliance with all standards on the vendor. A South East Queensland body constructor has

been identified and the current orders will be supplied from this vendor to the truck supplier. (Unitywater, 6 March 2013)

The fleet asset replacement program manager will be responsible for the replacement program. Resourcing for the project will be completed within existing Unitywater Plant and Fleet Section members.

SKM agrees that the use of the Local Buy Pty Ltd panel arrangements allows Unitywater to leverage its purchasing power and is an appropriate method for purchasing truck cab chassis. For the standard body no documentation has been provided regarding the engagement of the sole provided. Giving that there is minimal involvement from Unitywater staff in the purchasing of the trucks, SKM considers that the program can be delivered as scheduled.

F.6 Standards of service

Unitywater has adopted the following technical standards for the development and delivery of the program of works:

- *Plant and Vehicle Management Manual*, Institute of Public Works Engineering Australia Limited
- Leasing in the Queensland Public Sector Policy Guide, Queensland Treasury
- Code of Practice for Government Owned, Queensland Treasury
- Corporations' Financial Arrangements
- Transport Operations (Road Use Management) Act 1995
- Heavy Vehicle National Law Act 2011
- Unitywater Risk Management Policy (Doc Id: OGC-0005)
- Unitywater Risk Assessment Procedure (Doc Id: OGC-0008)

In addition, Unitywater's Plant and Fleet Section will measure the benefits of the program against the Business Support Services Division's key strategies as follows:

- Strategy 2.3 Business Resilience Improvement - The benefit will be realised for this performance area in attributing to the reduction in operational expenditure through reductions in the lease liability and through savings in servicing and maintenance costs
- Strategy 2.5 Fleet Management Improvement -The benefit will be realised for this performance area through increases in the return from the disposal of assets at the optimal replacement point in the assets life
- Strategy 2.11 Risk and Compliance Systems Improvement -The benefit will be realised for this performance area as contract risk will be reduced as the asset leases expire

SKM considers that the standards used for this project are appropriate.

F.7 Project cost

The total forecast project costs are outlined below in Table 130. Unitywater state that the "Carry Over" refers to seven trucks which were ordered in 2012-13 but not to be received until 2013-14 and the "Deferred Units 2012-13" expenditure refers to trucks which were due for replacement in 2012-13 but did not occur.

Table 130 : Project cash flow forecast - Trucks (Unitywater, 15 July 2013)

Carry Over	Deferred Units 2012/13	Programmed Units 2013/14	Programmed Units 2014/15	Total
$1,500,000	$1,080,000	$3,095,000	$2,880,000	$8,555,000

From the forecast asset renewals, the total costs were built up based on the number of trucks to be purchased and the average unit cost, as outlined in Table 131.

Table 131 : 2011 Forecast Asset Renewal Summary for 5 Years - Trucks (Unitywater, 15 July 2013)

Component	Carry over (to be completed in 2013-14)	To be completed in 2013-14	To be completed in 2014-15	Total
Total Replacements	7	23	16	46
Average Unit Price	$180,000	$177,343	$180,000	-
Total cost	**$1,260,000**	**$4,078,889**	**$2,880,000**	**$8,218,889**

SKM note that the “Carry Over” value of $1.5 million was included in the budget however as Unitywater have clarified that the expenditure is related to the replacement of 7 truck with a replacement value of $180,000 each, SKM accept $1.26 million of the $1.5 million.

Based on the replacement of 30 trucks in 2013-14 and 16 trucks in 2014-15 at the average unit costs above SKM considers that the proposed capital expenditure as outlined in Table 132 below be accepted.

Table 132 : Proposed capital expenditure

2013-14 ($)	2014-15 ($)	Total ($)
$5,338,889	$2,880,000	$8,218,889

Unitywater provided tax invoices for three trucks purchased in the 2012-13 financial year. These are outlined below in Table 133; only two are included below as the third truck was identical to tax invoice 2.

Table 133 : Cost comparison – Unitywater and SKM proposed truck replacements (Madill Izuzu, 30 April 2013) (Madill Izuzu, 26 June 2013) (Madill Izuzu, 26 June 2013)

Tax Invoice 1		Tax Invoice 2	
Description	**Cost ($)**	**Description**	**Cost ($)**
Supply (1) New Isuzu FRR 600 LONG Euro 5 Chassis only	64,527.72	Supply (1) New Isuzu MY13 NQR 450 L Service-Tipper-Jetta	62,112.52
Paulger Body including Crane Fitment Q12119	69,285.00	Paulger Body Quote Q-12183	91,569.09
Palfinger Crane PK700-EH-CR3X SKE	57,300.00	Accessories provided by dealer	6,434.53
Truck Extras	3,540.01	-	-
Total	**194,652.73**	**Total**	**160,116.15**

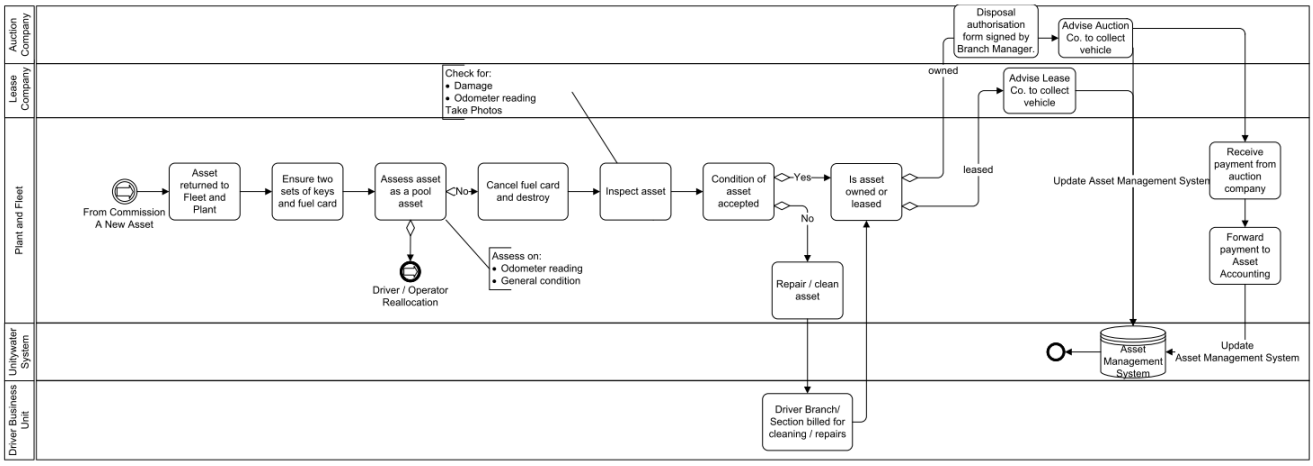
The average cost for trucks, based on these tax invoices provided, is approximately $172,000.

The costs of new vehicles, based on the replacement of the existing fleet, were sourced from the manufactures Australian websites. The invoiced cost of trucks actually purchased by Unitywater and the costs sourced by SKM were compared. For the Isuzu NQR 450, a price was sourced for a truck with Table/Tray Top Drop Sides as opposed to a cab chassis; however the price paid by Unitywater was still approximately $2,800 cheaper. For the Isuzu FRR 600, no 2013 new trucks were found however a 2010 ex-demo ISUZU FRR 600 Cab Chassis was found. This truck was approximately $8,400 more expensive than the price paid by Unitywater for a 2013 model.

Given the limited amount of cost data provided for previously purchased trucks it is difficult a draw any significant conclusions. However, these comparisons indicate that Unitywater is obtaining truck cab chassis at a lower cost through the Local Buy Panel than if they were to purchase them individually. It is noted that the difference is not significant and SKM expects a much larger discount given the number of trucks to be purchased.

Unitywater has a 'Disposal of an Asset Procedure' by which Unitywater sends all owned fleet assets to one of the three auction companies for disposal. The disposal procedure discusses the cashflow associated with disposals as per the below flowchart.

Figure 6-6 : Disposal of an Asset Procedure Flowchart



SKM sourced potential resale values for a selection of the truck fleet to be replaced in 2013-14. These are documented below in Table 134.

Table 134 : Sourced resale truck values

Size	Make	Model	No of vehicles	Year	SKM sourced resale value ($)
Truck Light > 4.5T to 8T	Fuso	CANTER	2	2006	$23,000 to $36,990
Truck Light > 4.5T to 8T	Hino	816 Hino 300	1	2008	$36,990 to $48,000
Truck Light > 4.5T to 8T	Hino	DUTRO	1	2006	$27,900 to $39,990
Truck Light > 4.5T to 8T	Isuzu	NPR 300	3	2005 - 2007	$24,970 to $39,990
Truck Light > 4.5T to 8T	Isuzu	NPR400	4	2005 - 2007	32,950 to $53,990
Truck Light > 4.5T to 8T	Mitsubishi	CANTER	1	2007	$21,990 to $39,990
Truck Light > 4.5T to 8T	Mitsubishi	FE659 Canter	2	2004	$25,000 to $34,900
Truck Light > 4.5T to 8T	Mitsubishi	FE84 Canter	1	2006	$33,900 to $38,950
Truck Medium > 8T to 15T	Isuzu	FRR500	2	2004/2005	$33,000 to $59,990
Truck Medium > 8T to 15T	Isuzu	FRR550	2	2004/2006	$32,900 to $62,990
Truck Medium > 8T to 15T	Mitsubishi	FK617	2	2004/2005	$40,000 to $49,999
Truck Medium > 8T to 15T	Nissan	PK265	1	2003	$54,000 to $89,500
Truck Heavy > 15T	Isuzu	GIGA CXZ 385	1	2007	$109,500 to $134,990

Note: SKM sourced a minimum of three resale values for each truck type to allow for variation in the age, kilometres, condition and features.

SKM appreciates that there is variability in the kilometres travelled and features on the trucks to be sold and those for which resale values have been sourced, however Table 134 : presents an approximation of the value of 'similar' trucks currently on the market. Based on these sourced resale values, Unitywater could expect a return of between $992,000 and $1,461,000 for the sale of the 2013-14 truck fleet due for replacement.

At the meeting on the 16th July 2013 Unitywater stated that as the new standard body truck is just being introduced none have been disposed of yet. When replacement of the truck is due Unitywater stated that they would be investigating three potential disposal methods:

- The cab chassis only without the standard body (with the body to be fitted to the new truck)

- The cab chassis with a standard tray (to be purchased just for disposal of the asset)
- The cab chassis with the standard body

The option which provided the best outcomes would be adopted.

Projected asset purchase prices are escalated at CPI. The assets are commissioned and capitalised on delivery of the asset to the Plant and Fleet depot. (Unitywater, May 2011).

The use of an estimated replacement cost based on historical purchases is good practice, with actual costs determined through the Local Buy Panel.

F.8 Efficiency gains

A 19% reduction in the size of the truck fleet is planned by Unitywater by the end of the 2013-14 financial year. This will be achieved through a reduction in staff numbers and realignment of the Fleet assets to suit business needs. Once this is realised there will be reduction in both the operating costs and capital expenditure associated with fleet. (Unitywater, 15 July 2013)

In response to the draft report Unitywater states that:

> *"Unitywater calculated the approximate reduction in total Plant and Fleet assets from the establishment of Unitywater on 1 July 2010 to the current total Plant and Fleet asset holding. This number is not a target for the future. It is just a calculation to demonstrate the concerted effort by the Plant and Fleet Section working in partnership with the other branches of Unitywater to achieve an efficient, purposed and effective Plant and Fleet asset base best suited to the Unitywater business.*
>
> *This achievement is driven through the Policy, Management Guideline and day-to-day processes of Plant and Fleet Section, all of which are aligned to the industry standard, IPWEA Fleet and Vehicle Management Manual. Unitywater used the number and the anecdotal information contained in the Fleet –Trucks Response document to demonstrate the commercial drivers of prudency and efficiency in a Plant and Fleet context. These commercial drivers are aligned o the Queensland Competition Authority prudency and efficiency drivers, effectively one and the same in outcome."*

F.9 Implications for operating expenditure

The replacement program reduces the operational expenditure for the Plant and Fleet Section through better management of the fleet and a reduction of the lease payments for leased assets. Over the five years of the proposed budget plan, leases are expected to be reduced to zero. This has been reflected in the Plant and Fleet Budget submissions. The liability at the time of the asset transfer from the SCRC was approximately $1.5 million. The operational expenditure for servicing and maintenance is not impacted as the same number of assets will be in service (Unitywater, May 2011).

F.10 Policies and procedures

Table 135 below identifies how the project has complied with the appropriate policies and procedures.

Table 135 : C9993 Fleet – Trucks compliance with the Authority's criteria

Initiative	Achievement (Yes/No/Partial)	Comment
Consideration of prudency and efficiency of capital expenditure from a regional (whole-of-entity and whole-of-sector) perspective	Yes	The fleet replacement program is for the whole of Unitywater.
Consideration of alternative investments, the substitution possibilities between operating costs and capital expenditure, and non-network alternatives such as demand management.	Yes	Unitywater has compared the costs associated with purchasing trucks and leasing trucks.

Initiative	Achievement (Yes/No/Partial)	Comment
A standardised approach to cost estimating, including a standardised approach to estimates for items such as contingency, preliminary and general items, design fees and contractor margins, so that there is uniformity of cost estimating across all proposed major projects	N/A	Unitywater's standardised cost estimation process has not been undertaken for this project. However it is noted that this spreadsheet is designed to cover Unitywater's typical works (ie pumps and pipework) rather than vehicles. Cost estimation is based on actual values from previous years which is considered appropriate.
A summary document to be prepared for identified major projects so as to facilitate standardised reporting	Yes	A Major Business Case was provided.
An implementation strategy to be developed for each major project	Yes	Information on Management and Procurement are provided in the Plant and Fleet Asset Replacement Program (Unitywater, May 2011)
A 'toll gate' or 'gateway' review process to be implemented so that appropriate reviews are undertaken at milestone stages for selected projects	Yes	• Operations crew evaluate the relevance of the asset to the business needs • Crew and business unit identify the standard body required and accept the cost of ownership • The authority to accept these charges is signed at both Branch and Divisional Management level to validate the expenditure • A Plant and Fleet Asset Procurement Form is completed
Information on the compatibility with existing and adjacent infrastructure and consideration of modern engineering equivalents and technologies.	Yes	Adoption of the standardised body for truck types and proposes.
Includes only commissioned capital expenditure from 1 July 2010 in the regulatory asset base (RAB) and therefore prices	Yes	Expenditure incurred is included in the RAB within the following year.

The documentation reviewed for this project is generally in line with Unitywater's capital delivery processes (eg Major Business Case, Plant and Fleet Asset Procurement Form). No Contract Recommendation and Approval Report has been provided. If completed correctly, this document may have assisted to further demonstrate the efficiency of this project.

F.11 Prudency and efficiency summary

The capital expenditure on trucks is required to maintain the efficiency and effectiveness of Unitywater in delivering their services to the customers and community of the MBRC and SCRC areas. The replacements are based on industry recommend Best Appropriate Practice using factors such as utilisation and Optimal Replacement Point as the triggers to replace the asset.

The primary driver of renewal has been demonstrated as the fleet function is vital to Unitywater's ability to achieve business objectives in meeting the needs of its customers. The review and justification of the need of the truck in the future, prior to inclusion in the replacement program, is appropriate.

Based on the documentation provided SKM is satisfied that suitable options have been reviewed and the selected option, purchase of vehicles, is the most suitable option. Based on the current maximum life replacement triggers, SKM agrees with the 23 trucks and 16 trucks proposed for replacement in 2013-14 and 2014-15 respectively. SKM accepts the inclusion of the additional 7 trucks carried over from 2012-13 in the 2013-14 replacement program.

SKM agrees that the use of the Local Buy Pty Ltd panel arrangements allows them to leverage their purchasing power and is an appropriate method for purchasing truck cab chassis and standard bodies.

Given that there is minimal involvement from Unitywater staff in the purchasing of the trucks, SKM considers that the program can be delivered as scheduled.

SKM is of the opinion that the standards used for this project are appropriate.

The use of an estimated replacement cost based on historical purchases is good practice, with actual costs determined through the Local Buy Panel.

Based on the replacement of 30 trucks in 2013-14 and 16 trucks in 2014-15, SKM considers that $5.32 million and $2.88 million, for 2013-14 and 2014-15 respectively, be accepted by the Authority. SKM recommends a reduction of $0.52 million as the costs do not align to the number of trucks and the unit rate for these vehicles. Overall, the project is found to be partially efficient.

F.12 Assessment of reported expenditure

Table 136 below identifies the proposed capital expenditure for C9993 Fleet – Trucks.

Table 136 : C9993 Fleet – Trucks proposed capital expenditure

Project	2013-14 ($'000)	2014-15 ($'000)	Total
C9993 Fleet – Trucks	4,862	3,880	8,742
RFI UW 01-06/03 Response	5,675	2,880	8,555
SKM proposed value	5,339	2,880	8,219
Variation (to QCA submitted value)	477	-1,000	-523
Variation (to Unitywater RFI value)	-336	0	-336

Note: Figures are “as incurred” expenditure and exclude any allowance for capital overhead or borrowing (interest) costs.

F.13 Extrapolation to other projects

It is not anticipated that the findings from this project can be extrapolated to other projects.

Appendix G. Terms of reference

Terms of Reference

2013-15 SEQ Price Monitoring

Assessment of Operating and Capital Costs

1. Project Background

1.1 Queensland Competition Authority

The Queensland Competition Authority (the Authority) is an independent statutory body responsible for assisting with the implementation of competition policy for government owned business entities in Queensland.

1.2 Retail Water Price Monitoring in South-East Queensland

The monopoly distribution and retail water and wastewater activities of Unitywater, Queensland Urban Utilities (QUU), Logan City Council, Redland City Council and Gold Coast City Council (the entities) have been referred to the Authority for a price monitoring investigation for the two-year period 1 July 2013 to 30 June 2015. A copy of the Ministers' Referral Notice (the Notice) is available on the Authority's website.[1]

The price monitoring investigation for 2013-15 follows and must build on three years of annual interim price monitoring from 2010-13.

The Authority has identified the information requirements for 2013-15 and issued each of the entities with information templates that indicate the form and nature of information required for price monitoring.

2. Purpose of Consultancy

The purpose of this consultancy is to assist the Authority to assess operating and capital expenditure of each entity based on the following approach:

(a) assess the existence of robust policies and procedures having regard to good industry practice, as well as compliance, using a sample of capital expenditure projects and operating expenditure categories;

(b) assess the robustness of the operating and capital expenditure program planning and delivery processes in an overall sense and identify any areas for improvement; and

(c) form a view on the prudency and efficiency of capital and operating expenditure, focussing on any areas of significant cost increase and identifying the reasons why.

The consultancy shall consist of two components.

2.1 Component 1 – Sample Selection

The consultancy must be based on each entity's policies and procedures, and planning and delivery processes, and a detailed review of a sample of capital projects and operating costs.

[1] The Ministers' Referral Notice is accessible at http://www.qca.org.au/water/SEQRetailPriceMon201315/.

Operating Expenditure

The sample operating expenditure categories for detailed review are employee expenses (including contractors), electricity, other materials and services, and corporate overheads. The consultant must identify the areas of significant cost increase within these categories.

Capital Expenditure

The Authority will select the capital expenditure sample for review in consultation with the consultant. As per the Notice, the capital expenditure sample will include six projects per entity (30 in total).

The actual sample size may differ, depending on each entity's submission (see worksheet 5.6.2 of the information template). To this end, the consultant is required to provide an indicative unit rate per additional forecast project and a unit rate per previously reviewed project.

2.2 Component 2 - Prudency and Efficiency of Costs

The consultant must assess whether each of the entities' operating and capital expenditure from 1 July 2013 is prudent and efficient.

Operating Expenditure

The consultant must assess whether each of the entities' operating costs from 1 July 2013 are prudent and efficient. In doing so, the consultant must:

(a) assess whether the entities' policies and procedures for operating expenditure are robust having regard to good industry practice, as well as compliance, for the four sampled expenditure categories;

(b) assess whether the operating program planning and delivery processes is robust and identify any areas for improvement; identify any efficiencies sought or achieved by the entities;

(c) report on the entities' progress against the savings targets set by the Authority in its previous interim price monitoring reports. For councils, the most recent relevant report is for 2011-12 in relation to Allconnex Water;

(d) for the sample of operating expenditures identified in Component 1 above:

  (i) describe the drivers of significant increases in 2013-15 operating expenditure relative to 2012-13 and 2011-12 including whether the expenditure is driven by legal obligations, new growth (see (d) below), operations and maintenance of existing infrastructure, or it achieves an increase in the standard of service that is explicitly endorsed by customers, external agencies or participating councils;

  (ii) assess whether the unit rates and indexes used to escalate costs are consistent with prevailing market conditions and historical trends;

  (iii) assess whether each of the sampled cost items are prudent and efficient. Operating expenditure is prudent if it is required to meet the entities' requirements relating to its legal and regulatory obligations or its contracts with customers. Operating expenditure is efficient if it is undertaken in a least-cost manner over the life of the relevant assets and is consistent with relevant benchmarks. The relevant benchmarks are to be agreed with the Authority; and

(iv) identify the value of any expenditure considered not to be prudent or efficient;

(e) where relevant, liaise with the Authority and its consultants appointed for the review of demand to ensure that consistent advice is provided to the Authority; and

(f) identify the value of any further savings that could be made, including from recent Government initiatives intended to relieve cost pressures on the entities.

Capital Expenditure

The consultant must follow the process and criteria set out in section 4.7 of the Final Report – SEQ Interim Price Monitoring Framework (April 2010)[2], and:

(a) assess whether the entities' policies and procedures for capital expenditure are robust having regard to good industry practice, as well as compliance, using the six sampled projects per entity. In particular, the policies and procedures should reflect strategic development plans, integrate risk and asset management planning, corporate directives, regional priorities, be consistent with external drivers, and incorporate robust procurement practices;

(b) the review of policies and procedures should also report on whether the entity:

(i) considers the prudency and efficiency of expenditure from a regional perspective;

(ii) includes only commissioned capital expenditure from 1 July 2010 in the regulatory asset base (RAB) and therefore prices;

(iii) applies a standardised approach to cost estimating, including for items such as indexation, contingency, preliminary and general items, design fees and contractor margins;

(iv) prepares a summary document and implementation strategy for major projects and programs; and

(v) includes a 'toll gate' or 'gateway' review process at relevant milestone stages;

(c) assess the robustness of each entity's capital expenditure program and delivery processes in an overall sense and identify any areas for improvement;

(d) form a view on the prudency and efficiency of sampled capital expenditure, focussing on areas of significant cost increase and identifying the reasons why.

Capital expenditure is:

(i) 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;

(ii) 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

[2] Available for download at http://www.qca.org.au/water/SEQinterim-price/finalreports.php.

having regard to the options available, including more cost-effective regional solutions, 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 regulatory obligations (e.g. water netserv plans[3]) is 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;

(e) identify the value of any sampled expenditure considered not to be prudent or efficient and whether the savings can be extrapolated;

(f) liaise with the Authority and its consultants appointed for the review of demand to ensure that consistent advice is provided to the Authority;

(g) identify any efficiency gains or economies of scale sought or achieved by the entities, and identify a prudent and efficient level of future gains with reference to appropriate benchmarks; and

(h) assess the regulatory asset lives for capital expenditure in 5.8.1.1, and the tax asset lives for capital expenditure in 5.8.1.2, against relevant benchmarks.

3. Resources/Data Provided

The consultant will be required to source information from the entities' information returns in the first instance, and will be required to liaise with the entities, the Authority and other stakeholders as appropriate to source further information.

To facilitate the flow of information, the consultant should consider:

(a) setting up a secure online portal for the provision of large documents from the entities;

(b) allowing for a number of days on site with each entity to ask follow up questions;

(c) keeping a weekly record of outstanding information for the entities and the Authority.

The Authority expects that the consultant will be familiar with:

(a) previous submissions and Authority price monitoring reports in 2010-13;

(b) SEQ Price Monitoring Information Requirements for 2013-15;

[3] Refer to the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009* (Qld).

(c) the Authority's SEQ Interim Price Monitoring Framework (April 2010); and

(d) the assessment of prudency and efficiency in other water reviews (including in other jurisdictions) and relevant approaches and benchmarks from these reviews.

4. Project Time Frame

4.1 Submissions and sample selection

As per the Notice, submissions from:

(a) Unitywater and QUU are due by 30 June 2013;

(b) Logan, Redland and Gold Coast City Councils are due by 30 September 2013.

Submissions will be provided to the consultant following appointment.

The consultant will be required to report on Component 1 within three business days of receiving the information returns.

4.2 Deliverables and report timeframes

The primary deliverables include:

(a) a report for each entity, one week after the consultant's visit, outlining preliminary findings for at least one sampled capital expenditure project and one sample operating expenditure category;

(b) staged delivery of the remaining items within the scope of the consultancy, culminating in a draft report by:

(i) Friday 2 August 2013 for Unitywater and QUU; and

(ii) Friday 1 November 2013 for Logan, Redland and Gold Coast City Councils.

(c) consultation with stakeholders following the release of the draft report (one week following the due dates of the preliminary draft report) which provides the last opportunity for stakeholders to provide further information; and

(d) a final report that addresses the views of stakeholders arising from consultation, by

(i) Friday 16 August 2013 for Unitywater and QUU; and

(ii) Friday 15 November 2013 for Logan, Redland and Gold Coast City Councils.

The consultant may also be required to provide further advice following the receipt of submissions on the Authority's Draft Report. The extent and scope of this work will depend on the nature of submissions. If required, this work will form a separate item under the contract (with separate terms of reference) to be charged at the agreed hourly rates.

5. Proposal Specifications and Fees

The proposal should:

- include the name, address and legal status of the tenderer;

- provide the proposed methods and approach to be applied;
- provide a fixed price quote for the provision of the services detailed herein; and
- nominate the key personnel who will be engaged on the assignment together with the following information:
  - name;
  - professional qualifications;
  - general experience and experience which is directly relevant to this assignment;
  - expected time each consultant will work on the project; and
  - standard fee rates for any contract variations.

The fixed price quoted is to be inclusive of all expenses and disbursements. A full breakdown of consultancy costs is required with staff costs reconciled to the consultancy work plan.

The consultant should invoice the lower of the fixed price quote or a time and materials cost.

A progress payment of 50% of the expected total payment can be made within 28 days of receiving an invoice following the Authority's acceptance of a satisfactory Draft Report. Total payment will be made within 28 days of receiving an invoice at the conclusion of the consultancy.

6. Contractual Arrangements

This consultancy will **only** be offered in accordance with the Authority's standard contractual agreement.

This agreement can be viewed at http://www.qca.org.au/about/consultancyagreement.php

7. Reporting

The consultant must provide its assessment in a clear and comprehensive manner to allow for ease of use in Authority reports.

The Authority requires reasoned and substantiated assessments, inclusion the provision of a high standard of detailed information. The Authority expects the consultant to substantiate and justify its conclusions with reference to relevant benchmarks and information sources.

The consultant should advise at earliest opportunity any critical issues that may impede progress of the consultancy, particularly issues that impact on the successful delivery of the Purpose of Consultancy outlined in Section 2 above.

The consultant may be required to provide the Authority with a formal presentation to all Authority staff on the findings of the draft and final reports. An electronic version of the final report is required, saved in Microsoft© Word with any numeric data in Microsoft© Excel.

8. Confidentiality

Under no circumstance is the selected consultant to divulge any information obtained from The Entities or the Authority for the purposes of this consultancy to any party other than with the express permission of the Entity and the Authority.

9. Conflicts of Interest

For the purpose of this consultancy, the consultant is required to affirm that there is no, and will not be any, conflict of interest as a result of this consultancy.

10. Authority Assessment of Proposal

The proposal will be assessed against the following criteria:

(a) understanding of the project;

(b) skills and experience of the firm and team;

(c) the proposed methods and approach;

(d) capacity to fulfil the project's timing requirements; and

(e) value for money.

In making its assessment against the criteria, the Authority will place most weight on relevant experience of the team members involved and the proposed method for the completion of the task.

11. Insurance

The consultant must hold all necessary work cover and professional indemnity insurance.

12. Quality Assurance

The consultant is required to include details of quality assurance procedures to be applied to all information and outputs provided to the Authority.

13. Grievances

If during the course of your engagement you wish to raise any grievances or make a complaint, please contact Mrs Robyn Farley-Sutton, Director Corporate Services, on (07) 3222 0505 or robyn.farley-sutton@qca.org.au

14. Lodgement of Proposals

Proposals are to be lodged with the Authority by **Monday 17 June 2013**.

For further information concerning this consultancy, please contact Shannon Murphy on (07) 3222 0592 or shannon.murphy@qca.org.au.

Proposals should be submitted to:

Director Water
Queensland Competition Authority

GPO Box 2257
Brisbane Qld 4001

Phone: (07) 3222 0555
Fax: (07) 3222 0599
Email: seqwater@qca.org.au